

Figure 1

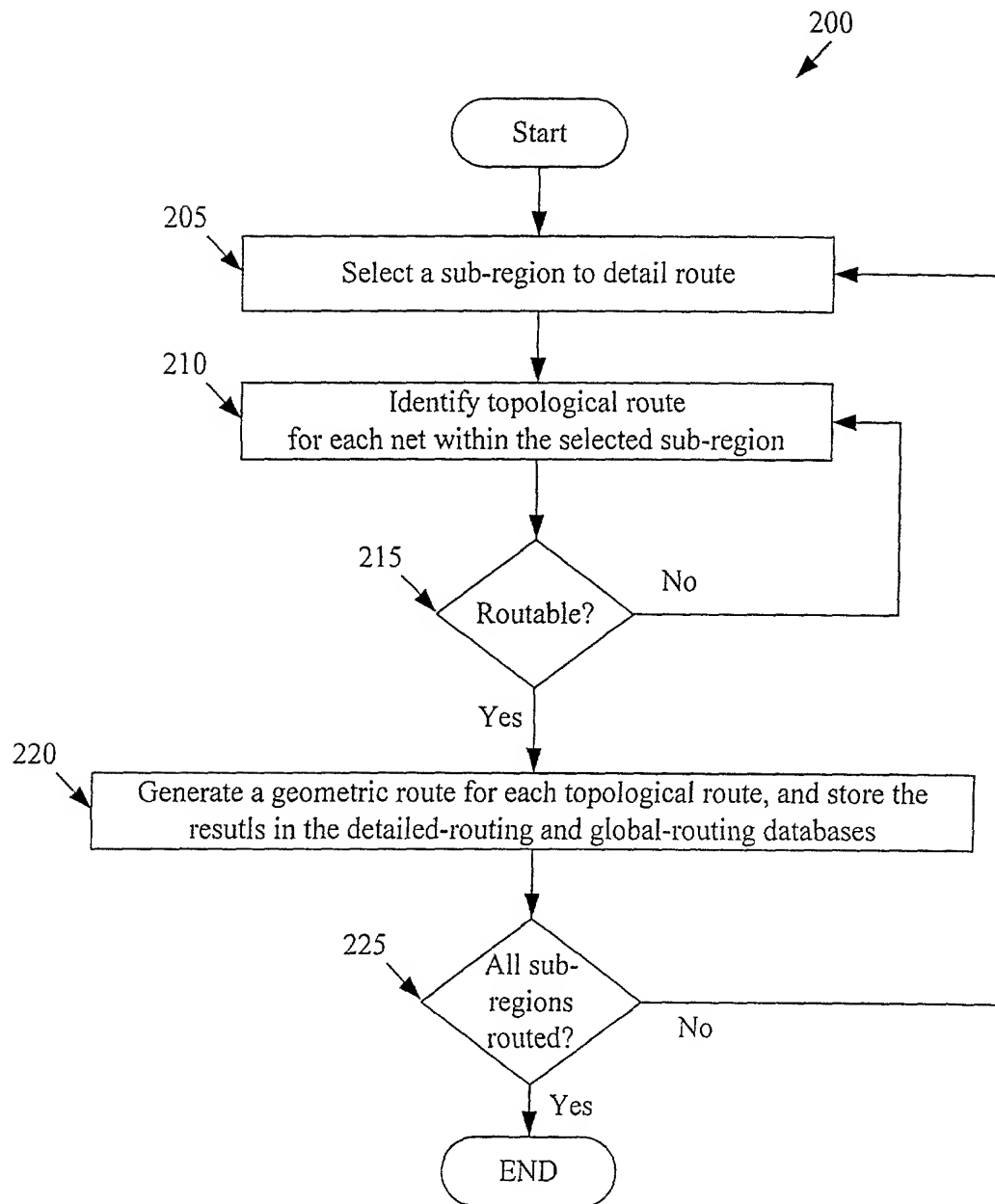


Figure 2

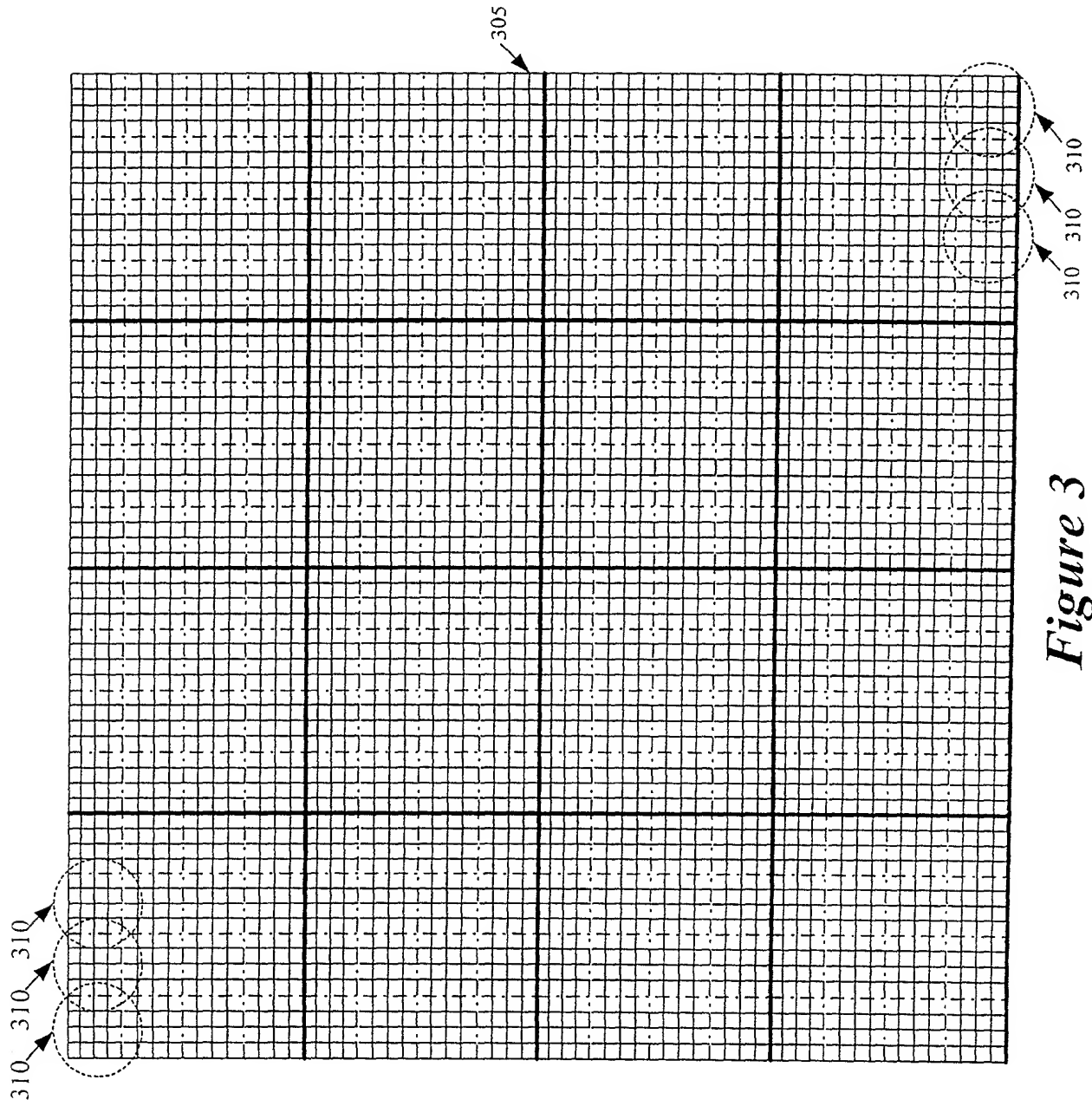


Figure 3

FIGURE 4
A perspective view of a grid system for a game board, showing a 4x4 grid of squares. The grid is divided into four quadrants by a vertical line and a horizontal line. The top-left quadrant contains a shaded square (410) and a shaded L-shaped square (415). The top-right quadrant contains a shaded square (420) and a shaded L-shaped square (425). The bottom-left quadrant contains a shaded square (430) and a shaded L-shaped square (435). The bottom-right quadrant contains a shaded square (440) and a shaded L-shaped square (445). The grid is labeled with 'A' at the top-left corner, 'B' at the top-right corner, and 'C' at the bottom-right corner. The grid is also labeled with '405' at the top-left corner, '455' at the top-right corner, and '460' at the bottom-right corner.

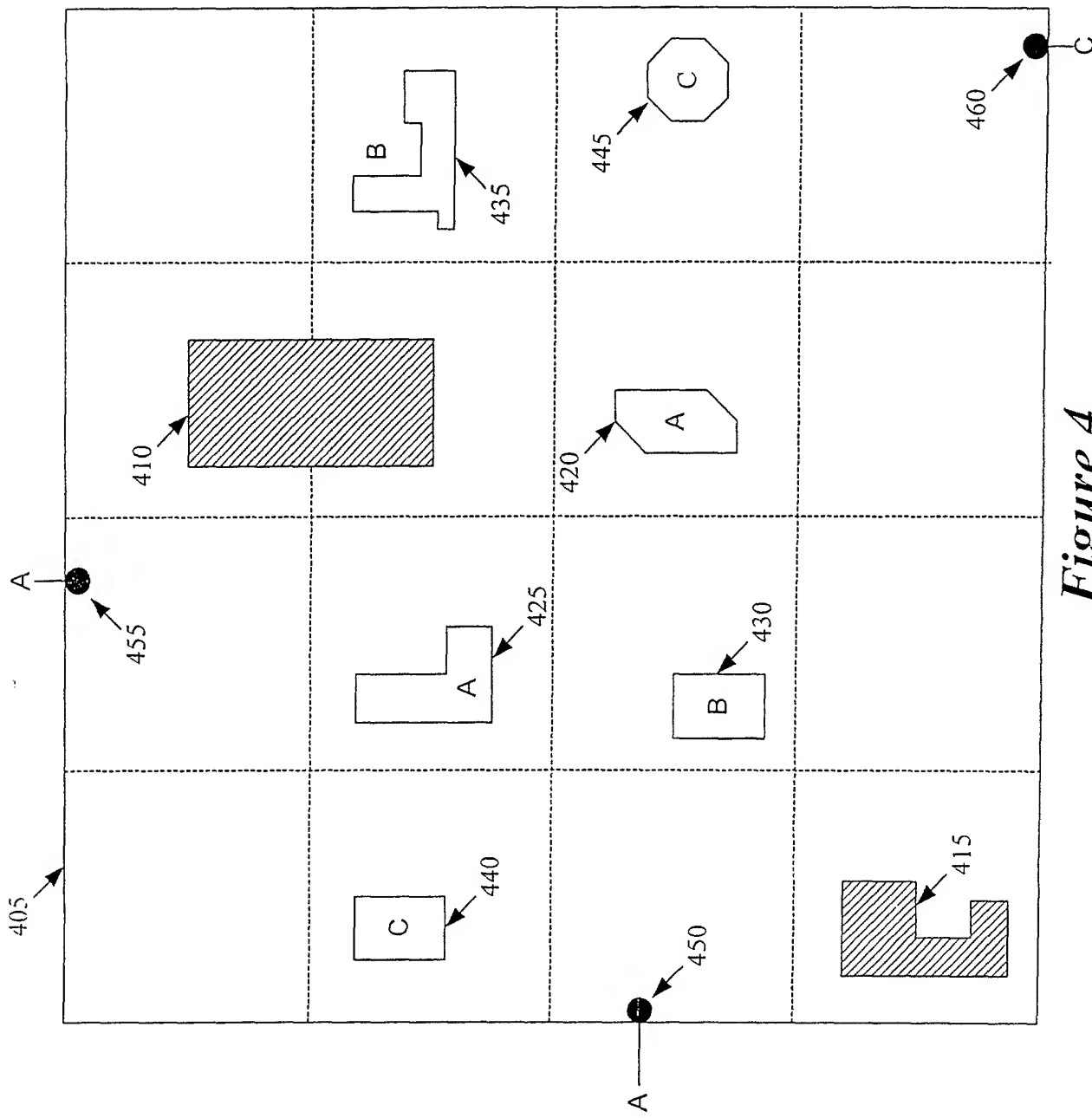


Figure 4

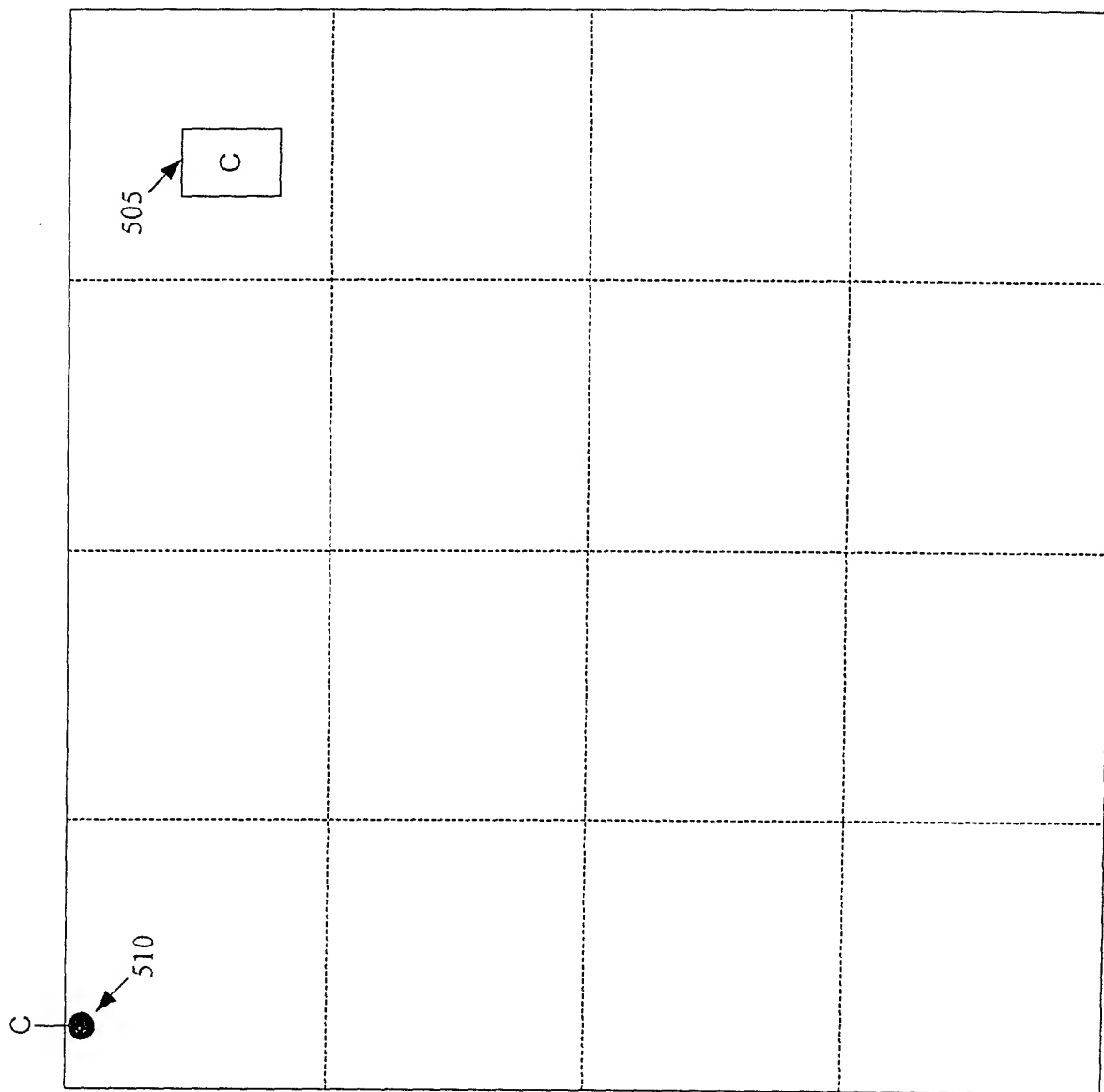


Figure 5

Figure 6

```

-List of Geometries
--Each Geometry including a sequence of points & layer assignment
-Bounding box of the region
-Array of layer properties
--Minimum wire size
--Minimum spacing
--Via sizes
--Cost/Unit
-Netlist specifying a number of nets
--Each net specifying a set of pins
--Each pin specifying a set of ports
--Each port specifying a set of geometries

```

Figure 7

```

-List of Geometries
--Each Geometry including a sequence of points & layer assignment
--List of connection nodes inside each pin geometry
-Bounding box of the region
-Array of layer properties
--Minimum wire size
--Minimum spacing
--Via sizes
--Cost/Unit
-Netlist specifying a number of nets
--Each net specifying a set of pins
--Each pin specifying a set of ports
--Each port specifying a set of geometries
-For each layer, a graph specifying
--Nodes
--Edges
--Faces

```

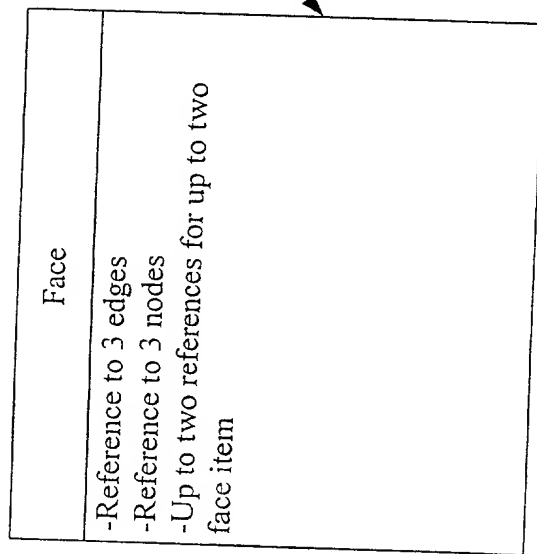


Figure 8

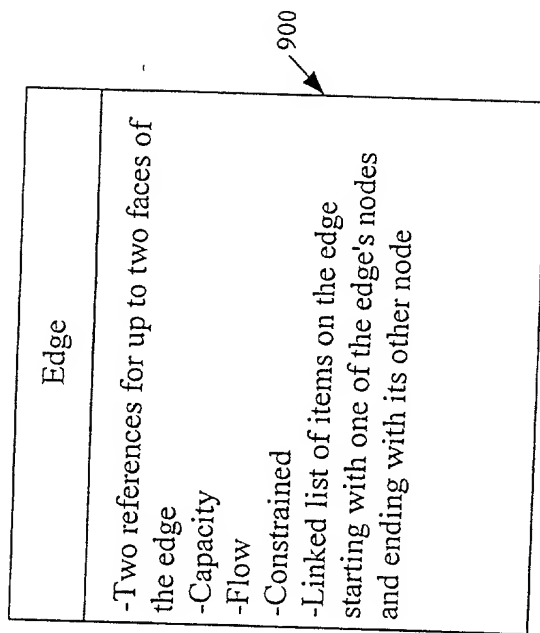


Figure 9

Node
<ul style="list-style-type: none"> -Net Identifier -One or more planar-path references to adjacent topological items in the same planar path -A pair of via-path references to up and down topological via items -A references to list of edges connected to the node -For each edge, an edge reference to the next or previous topological item on the edge -A reference to the geometry of the node -Vertex number identifying the vertex of the geometry -Location of the node

1000

Figure 10

Edge Item
<ul style="list-style-type: none"> -Reference to its edge -Net Identifier -A pair of planar-path references to adjacent topological items in the same planar path -A pair of edge references to the next and previous topological item on the edge

1100

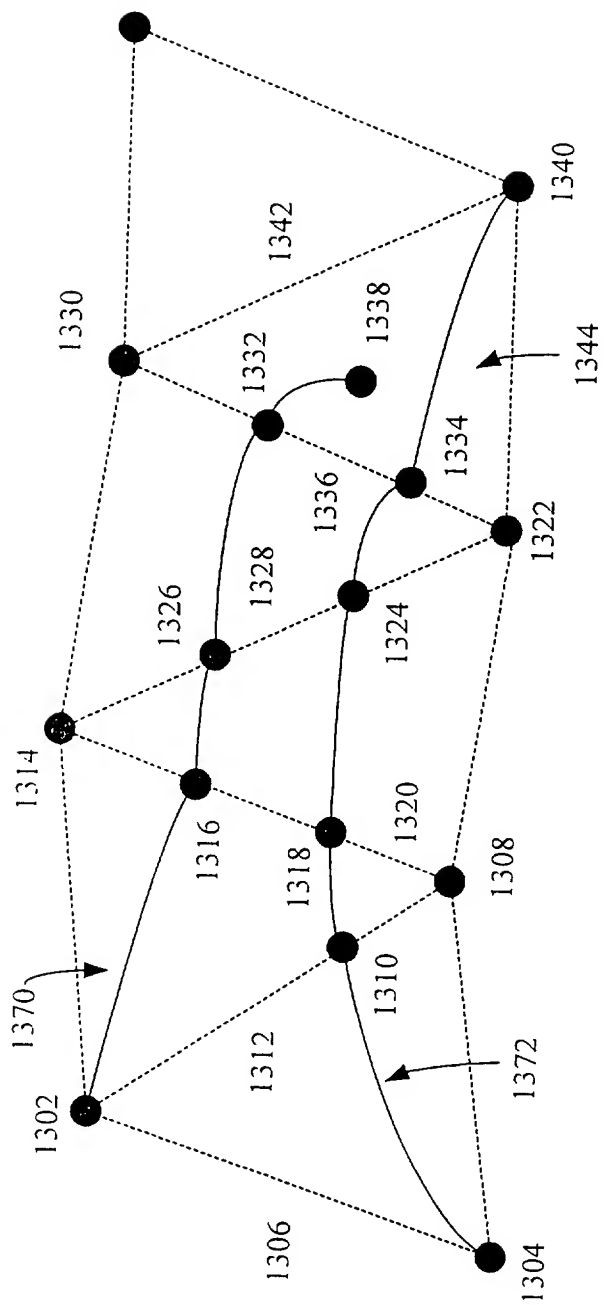
Figure 11

Face Item
<ul style="list-style-type: none"> -Reference to its face -Net Identifier -Up to 3 planar-path references for adjacent topological items in the same planar path -A pair of via-path references for up and down topological via items -Bounding polygon that defines legal face item locations -Constraining Points and Distances

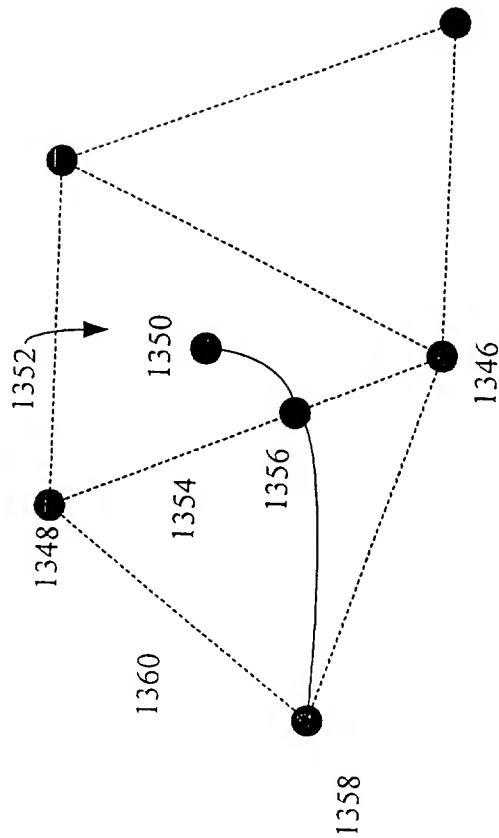
1200

Figure 12

1302 1304 1306 1308 1310 1312 1314 1316 1318 1320 1322 1324 1326 1328 1330 1332 1334 1336 1338 1340 1342 1344 1346 1348 1350 1352 1354 1356 1358 1360 1362 1364 1366 1368 1370 1372 1374 1376 1378 1380 1382 1384 1386 1388 1390 1392 1394 1396 1398 1400 1402 1404 1406 1408 1410 1412 1414 1416 1418 1420 1422 1424 1426 1428 1430 1432 1434 1436 1438 1440 1442 1444 1446 1448 1450 1452 1454 1456 1458 1460 1462 1464 1466 1468 1470 1472 1474 1476 1478 1480 1482 1484 1486 1488 1490 1492 1494 1496 1498 1500



Layer 2



Layer 3

Figure 13

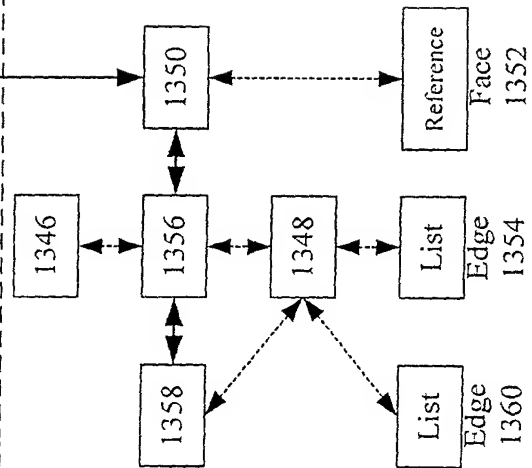
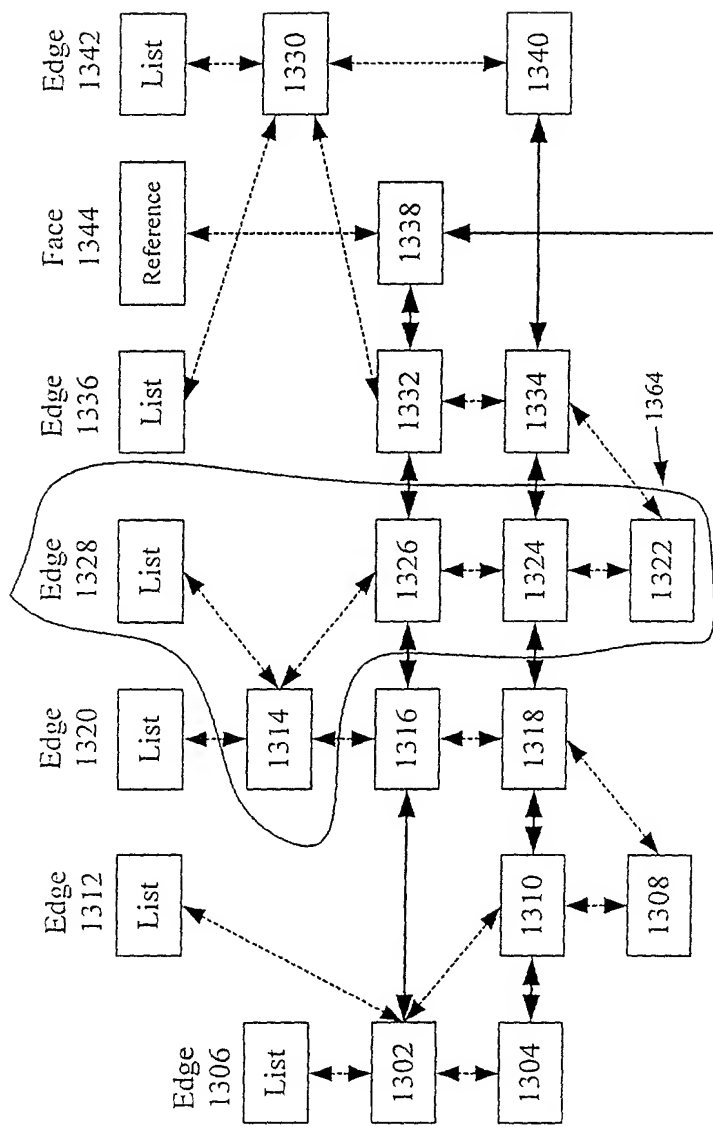


Figure 14

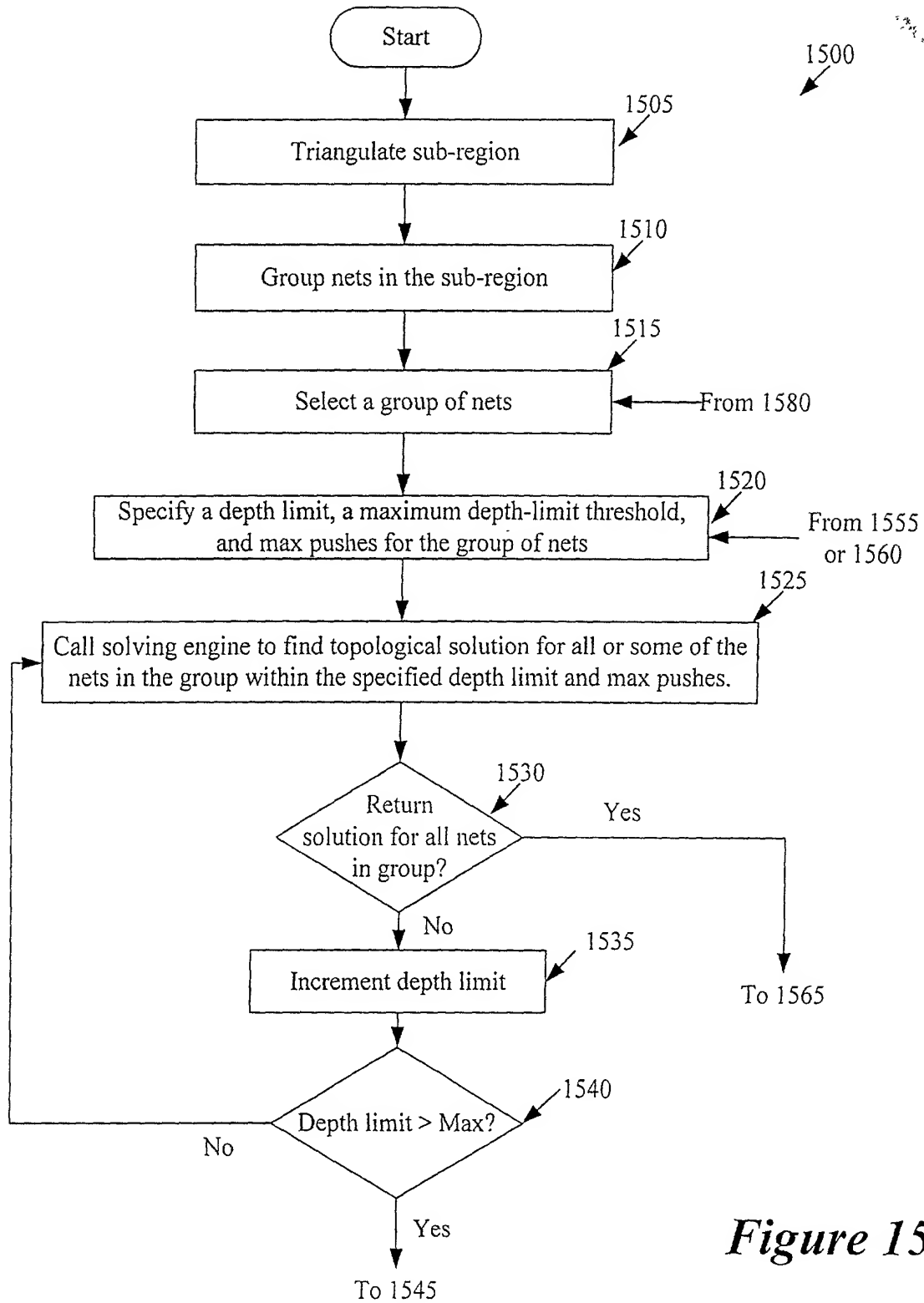


Figure 15A

Figure 15: $\frac{\text{Figure 15A}}{\text{Figure 15B}}$

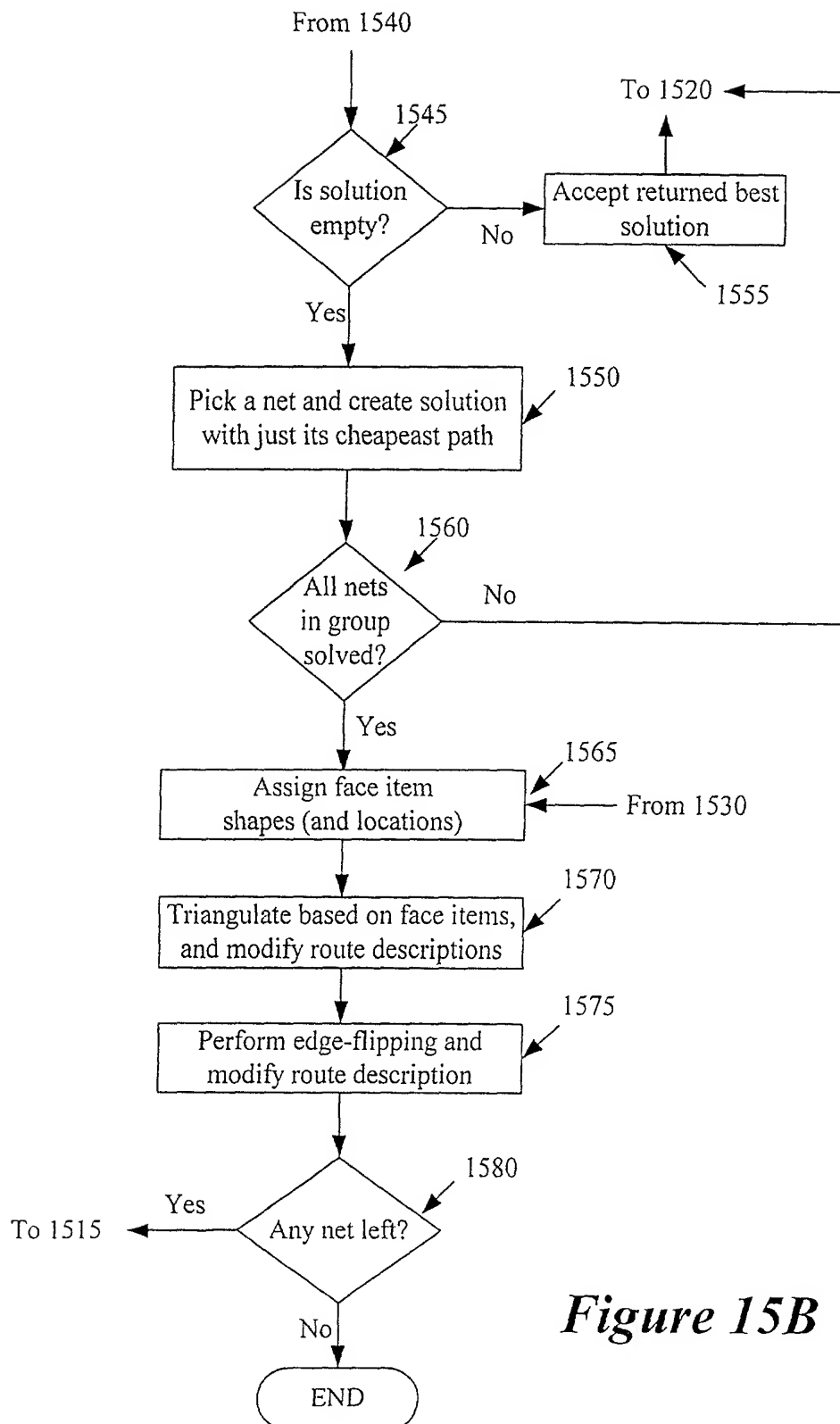


Figure 15B

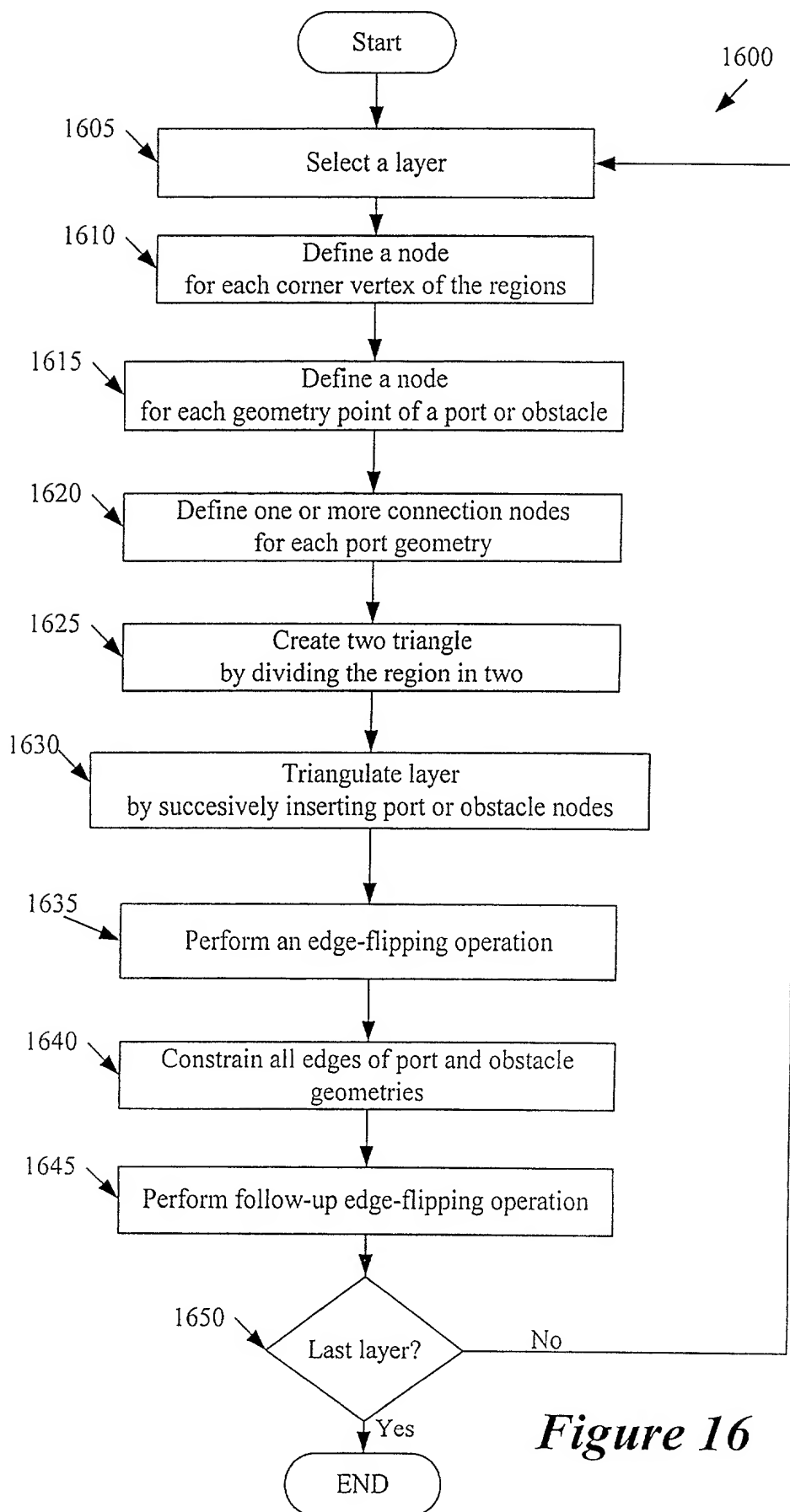


Figure 16

THESE DOCUMENTS SONT DES REPRODUCTIONS DE LA COLLECTION DE LA BIBLIOTHEQUE NATIONALE DU CANADA

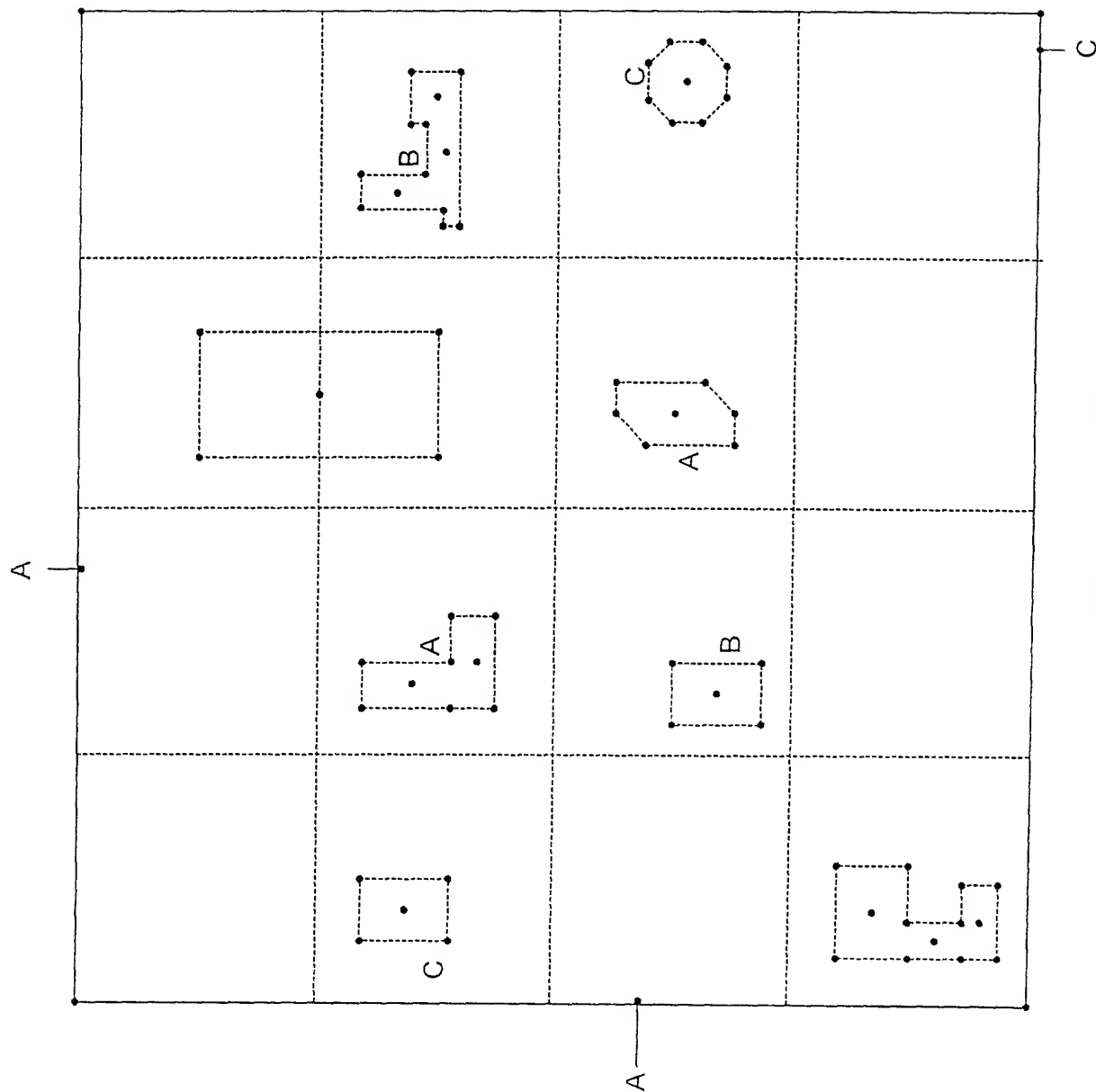


Figure 17

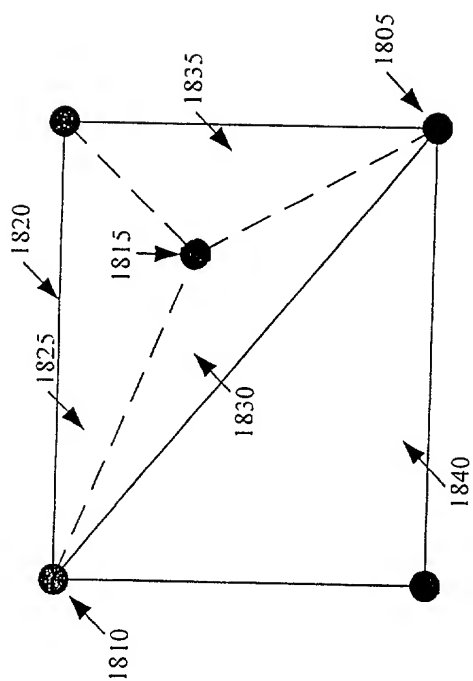
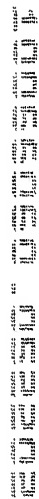


Figure 18

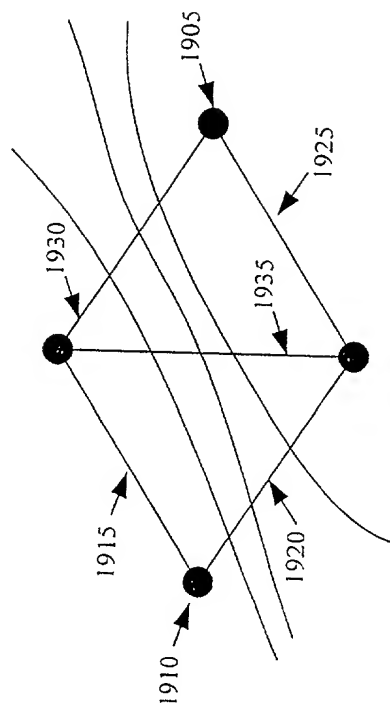


Figure 19

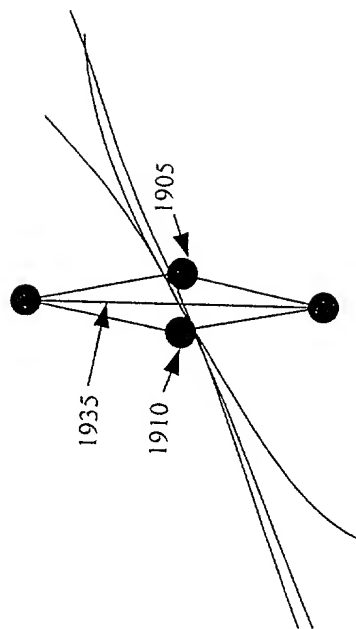


Figure 20

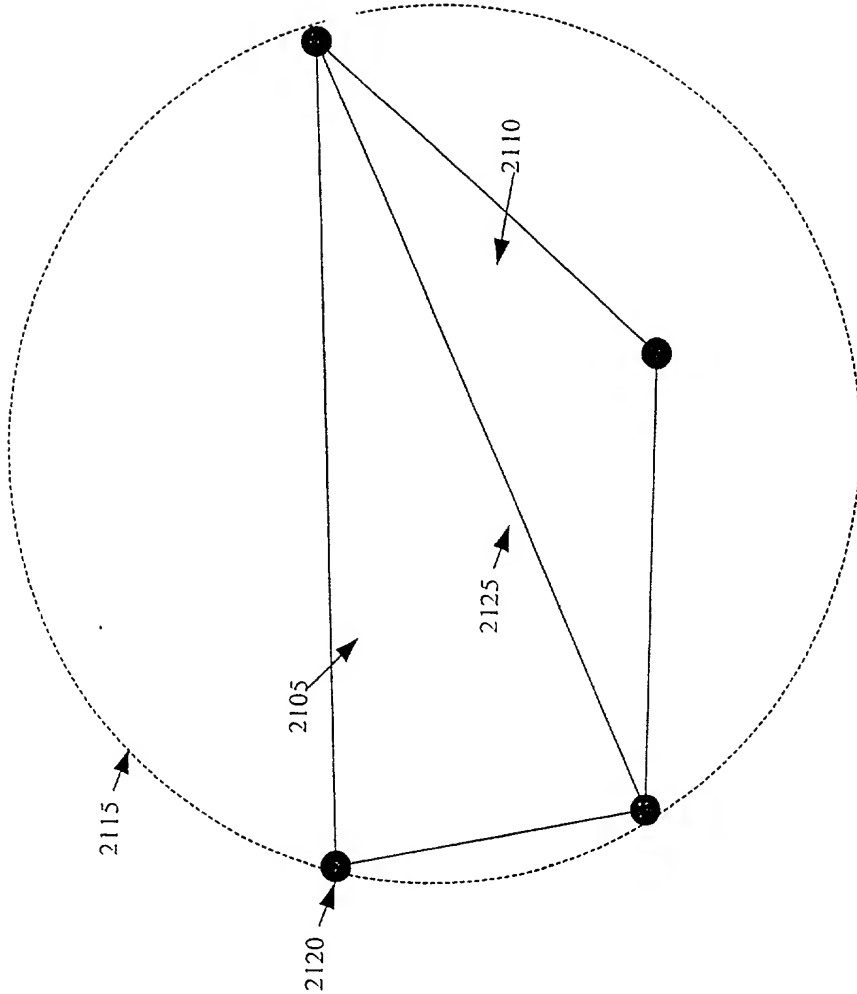


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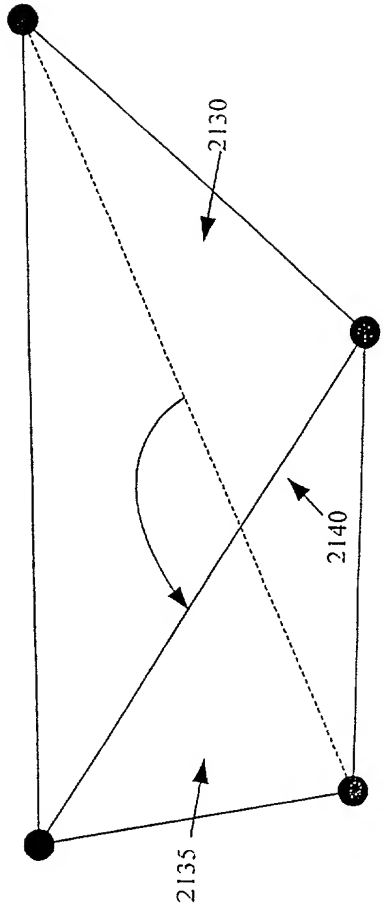


Figure 22

2305
 2315
 2320
 2325
 2310

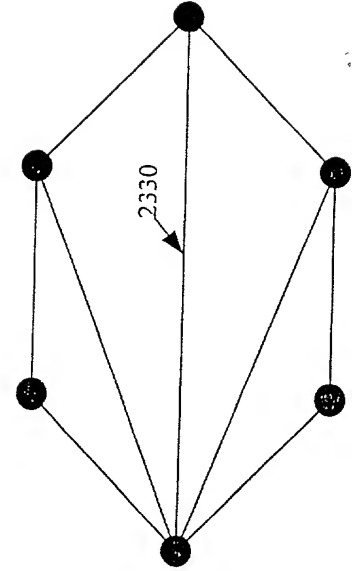
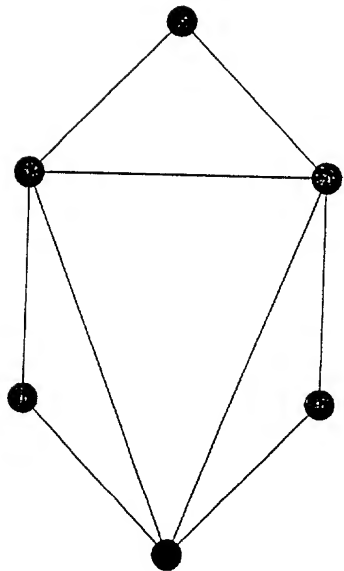
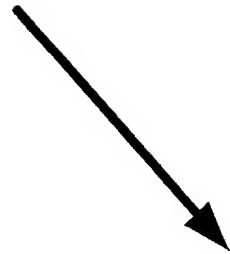
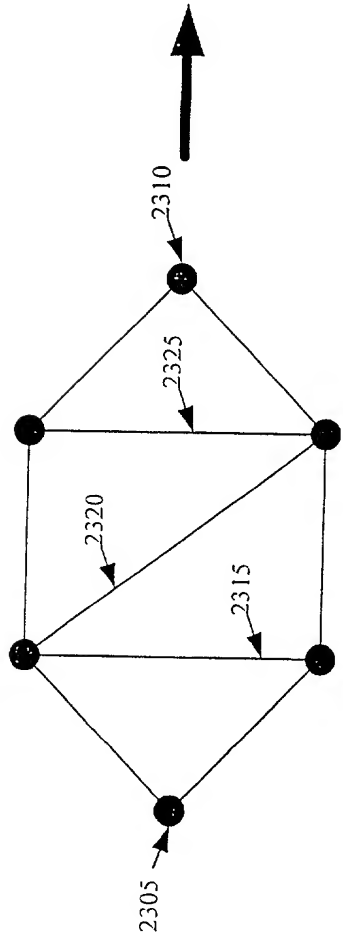
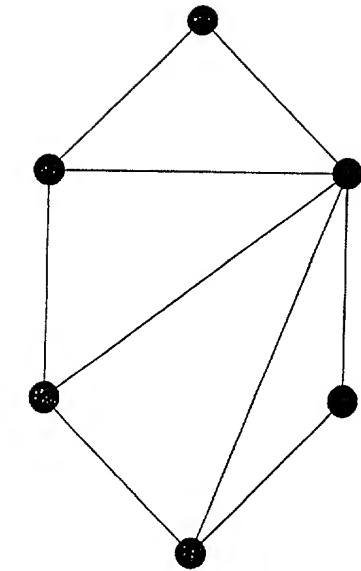


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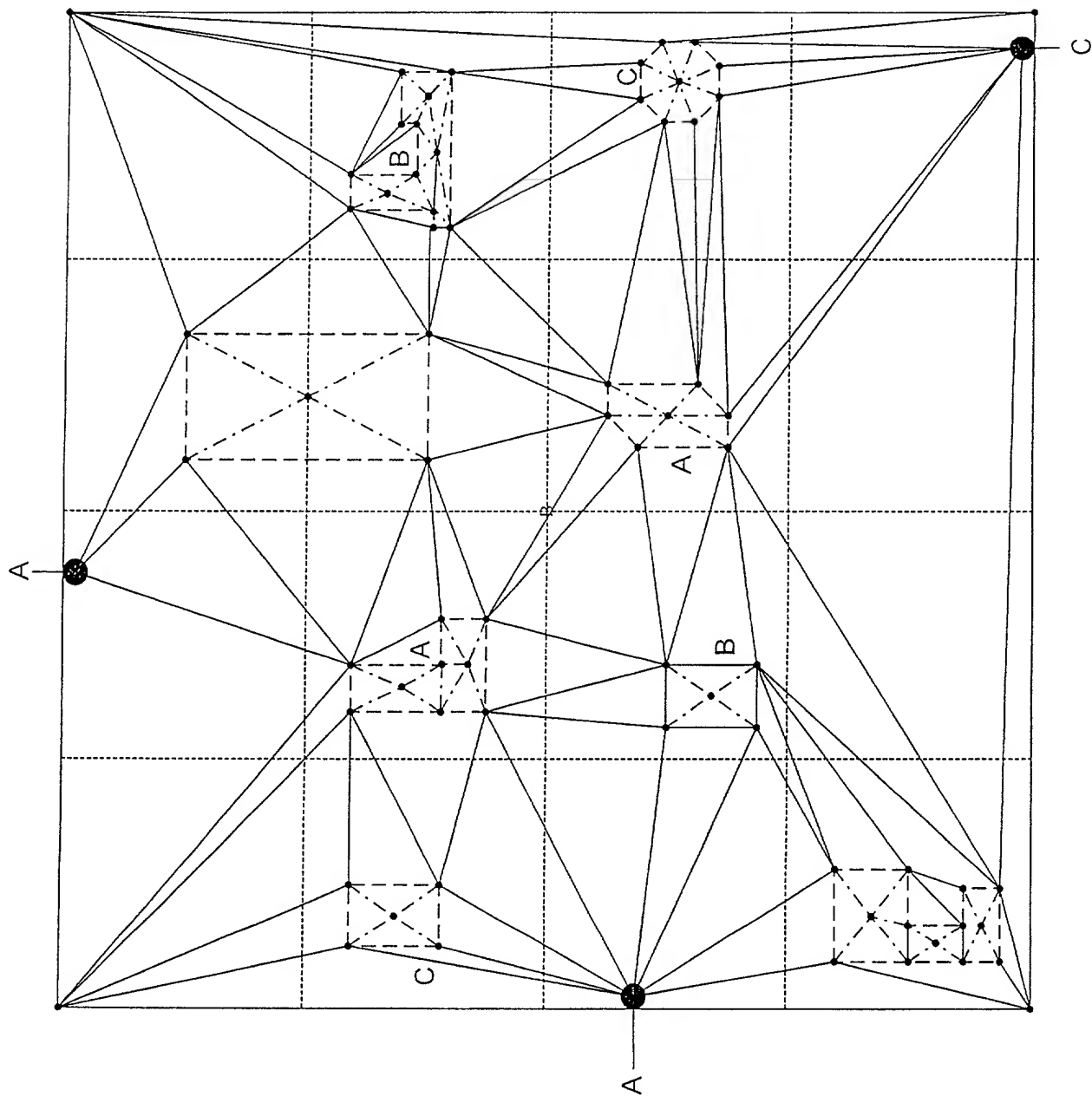


Figure 24

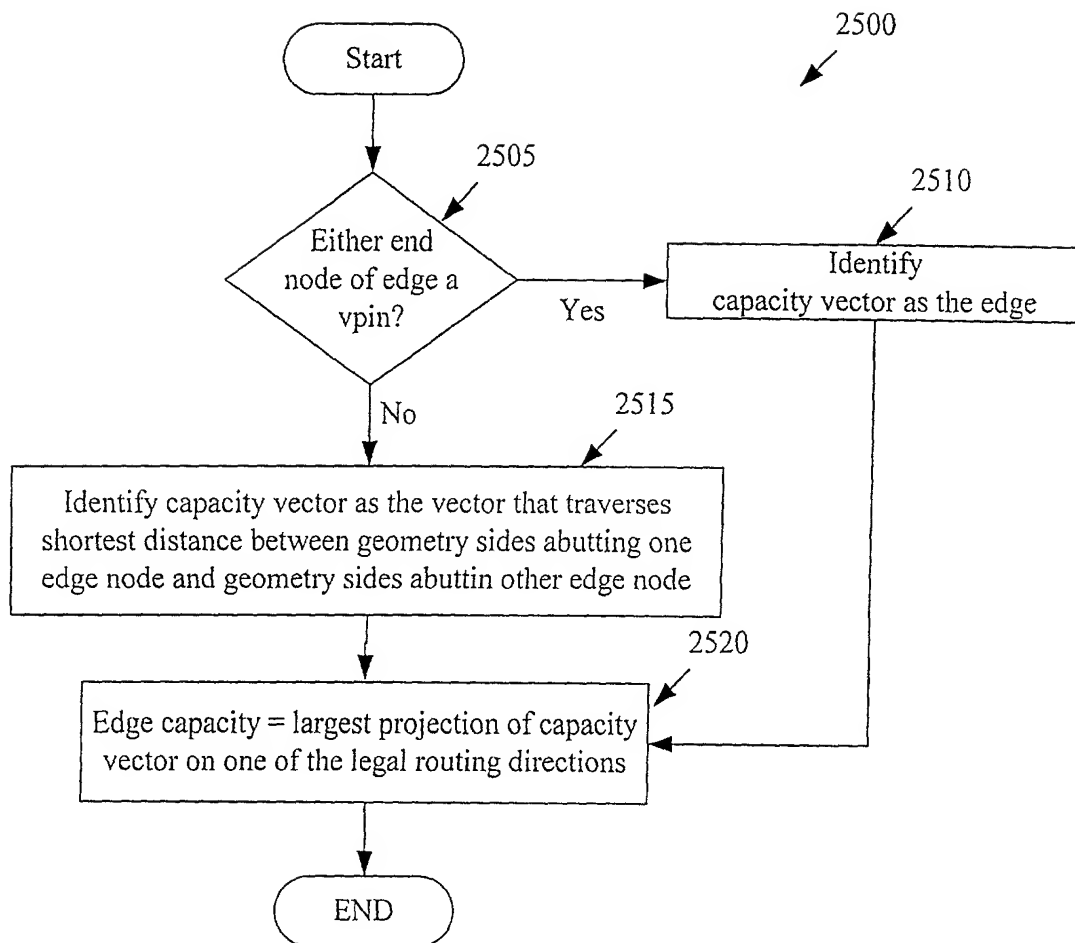


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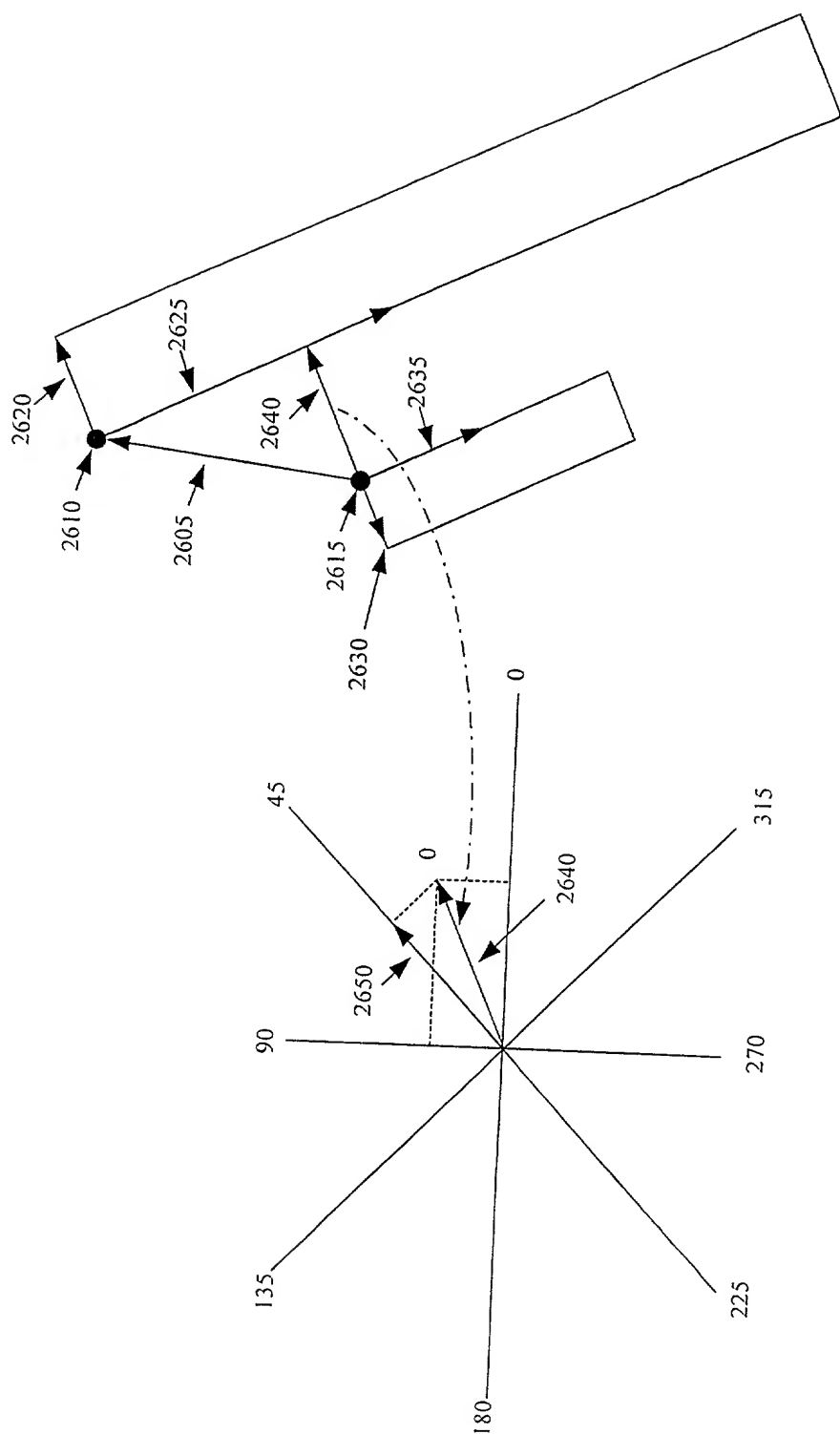


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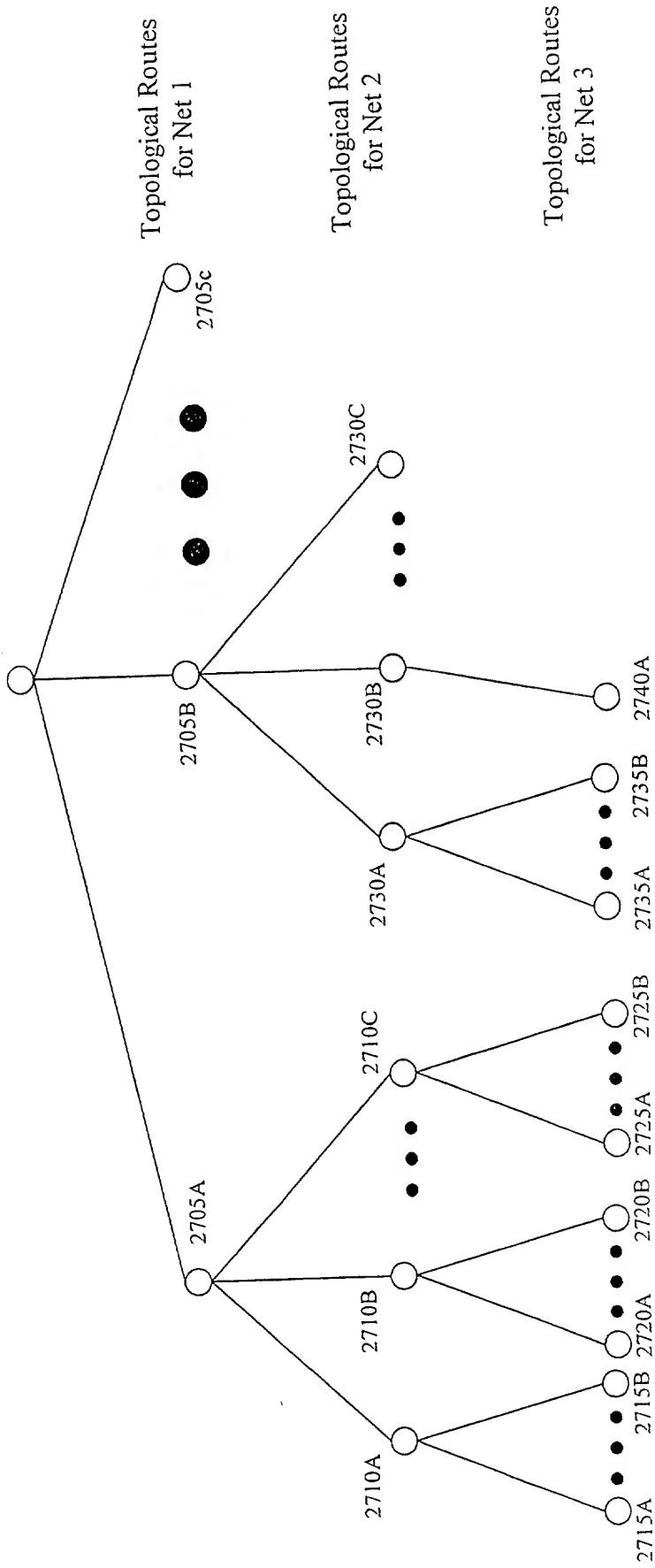


Figure 27

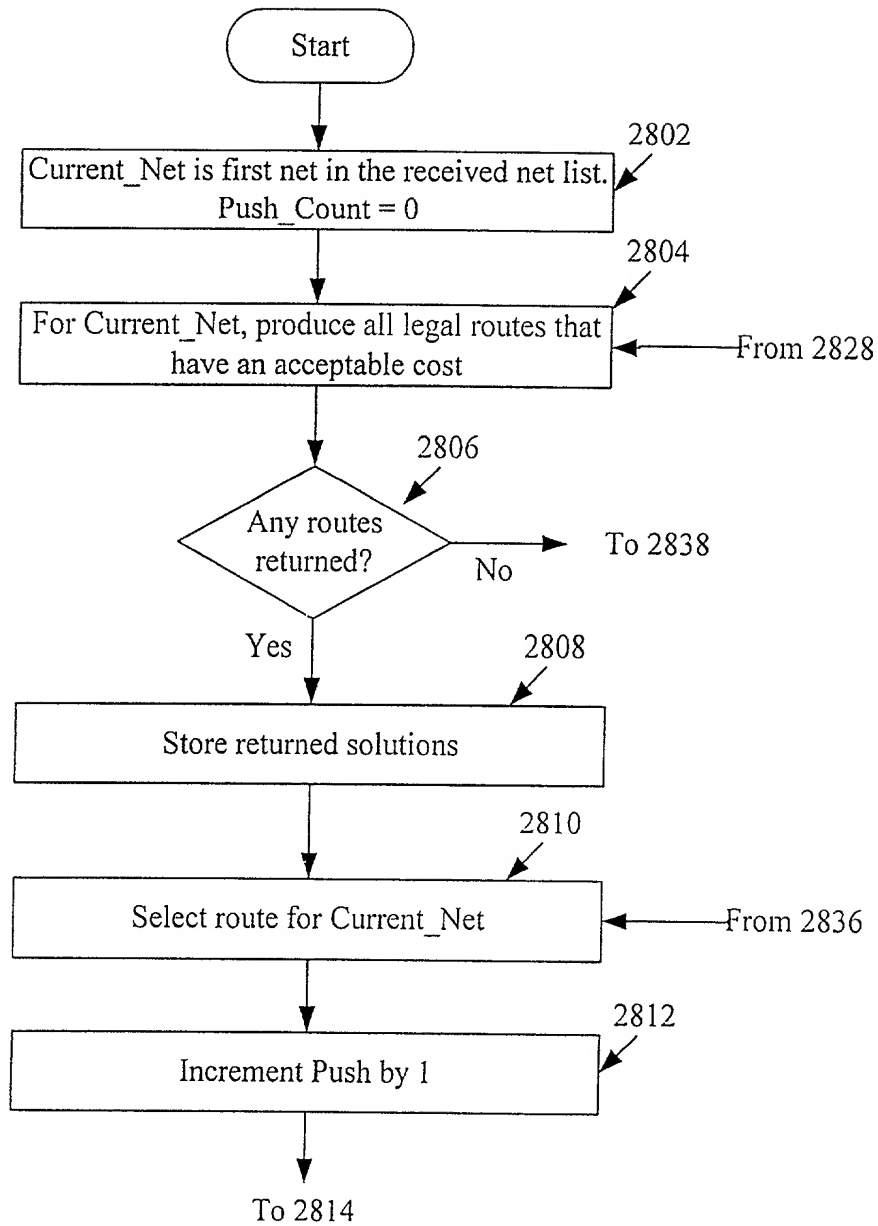


Figure 28A

Figure 28: $\frac{\text{Figure 28A}}{\frac{\text{Figure 28B}}{\text{Figure 28C}}}$

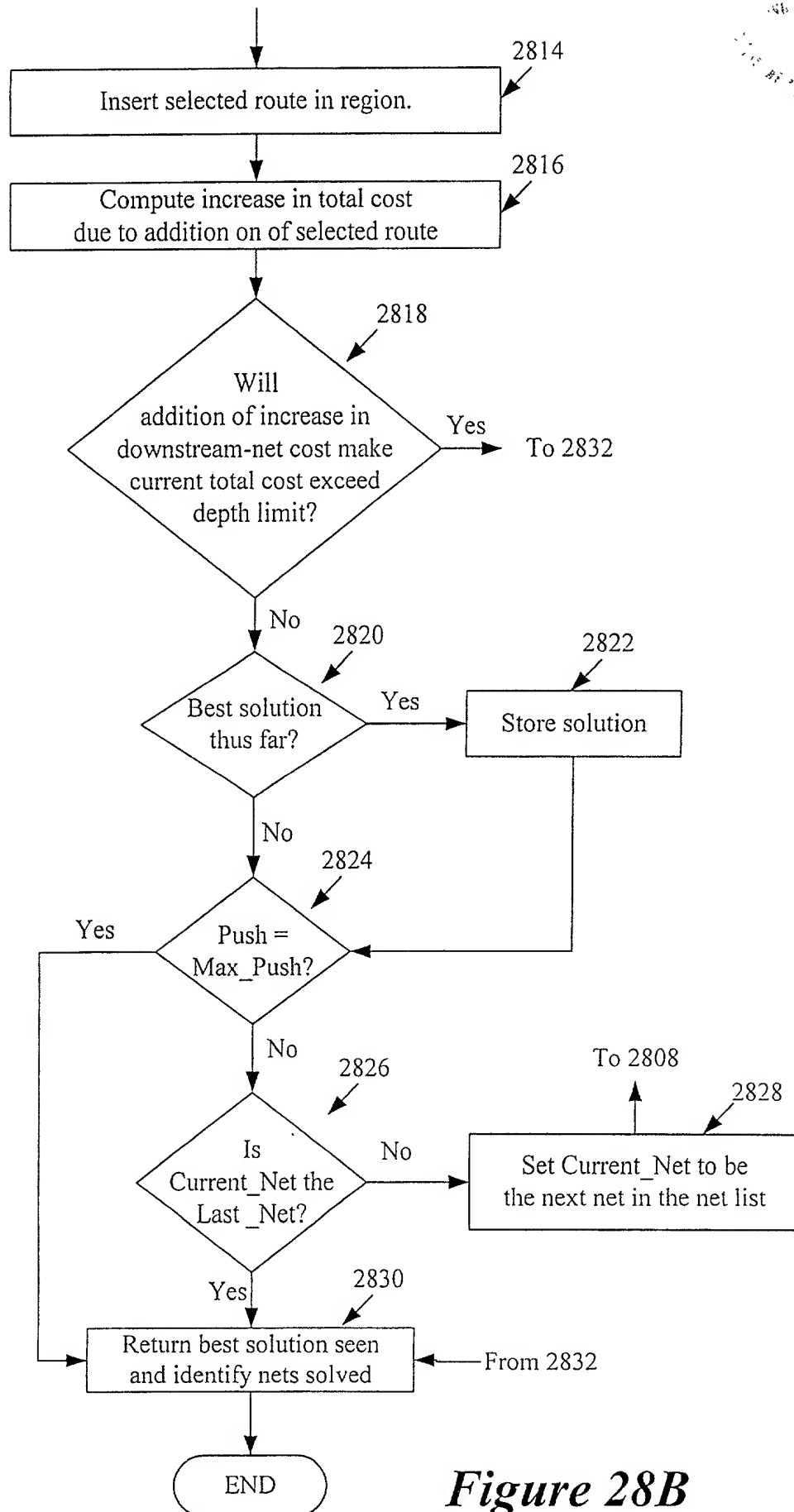


Figure 28B

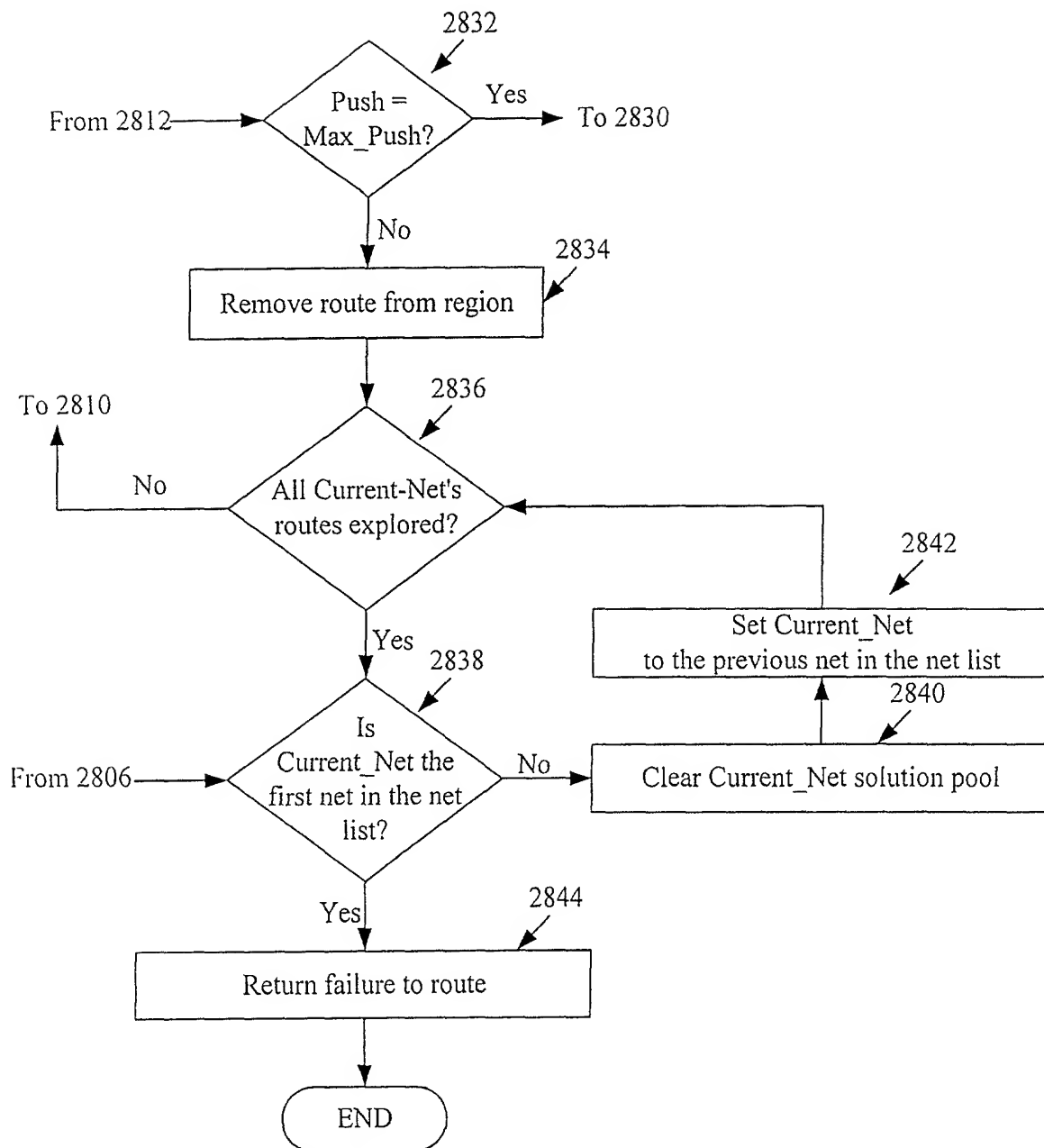


Figure 28C

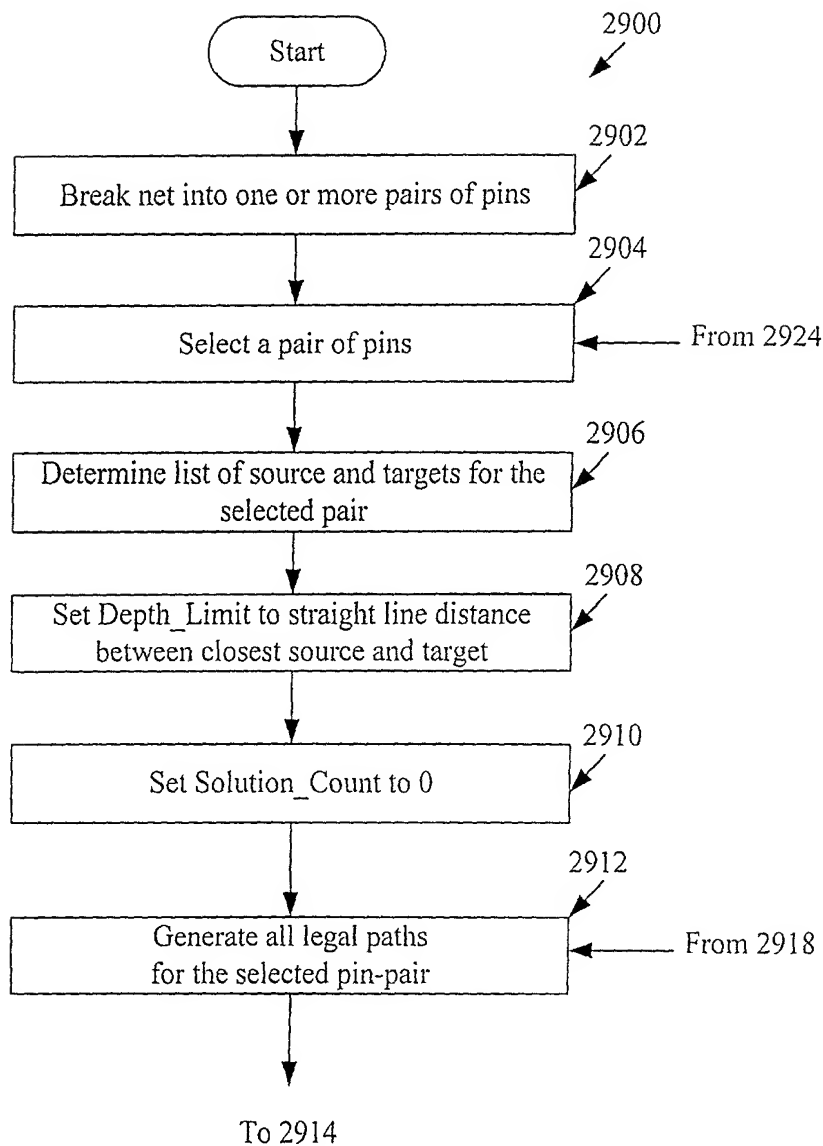


Figure 29A

Figure 29: Figure 29A
Figure 29B

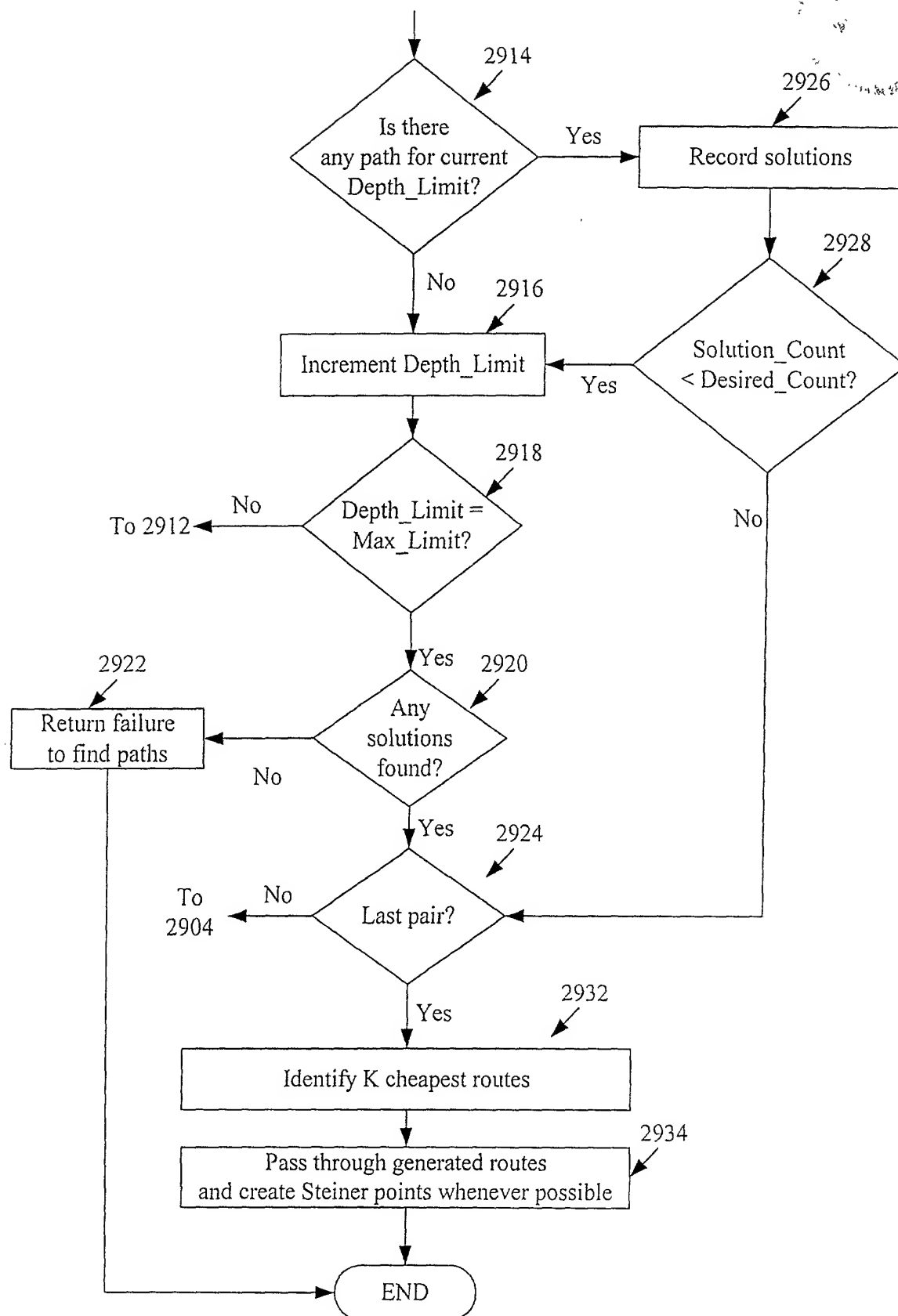


Figure 29B

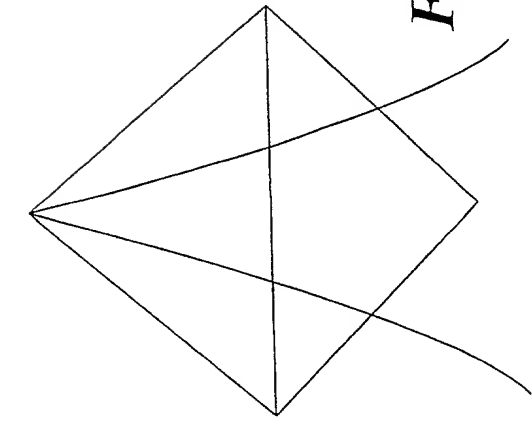


Figure 30A

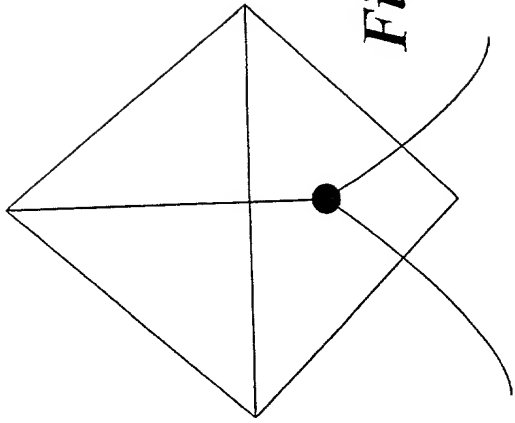


Figure 30B

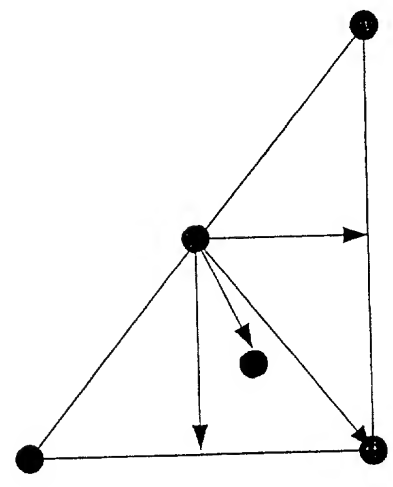


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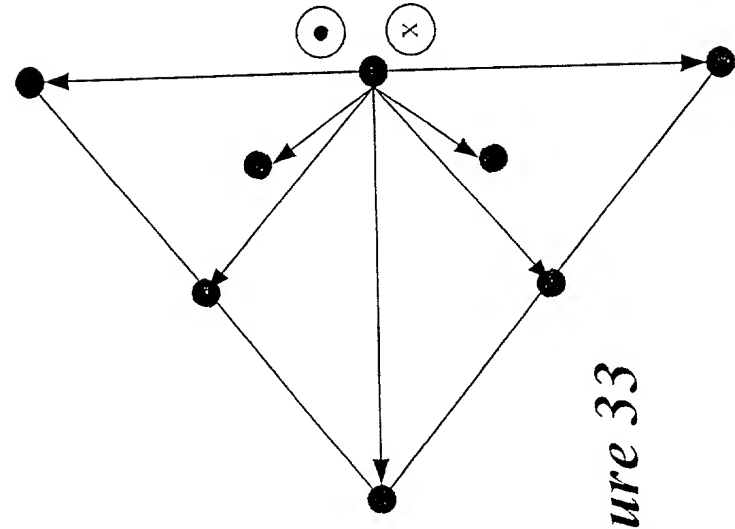


Figure 33

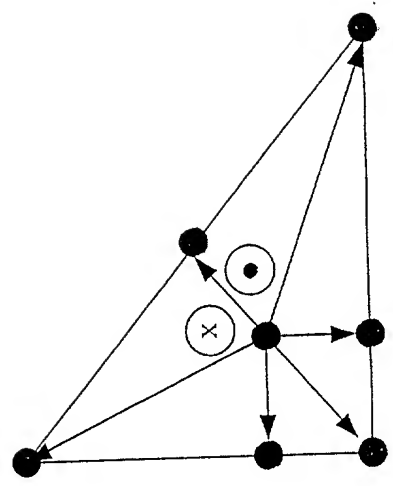


Figure 34

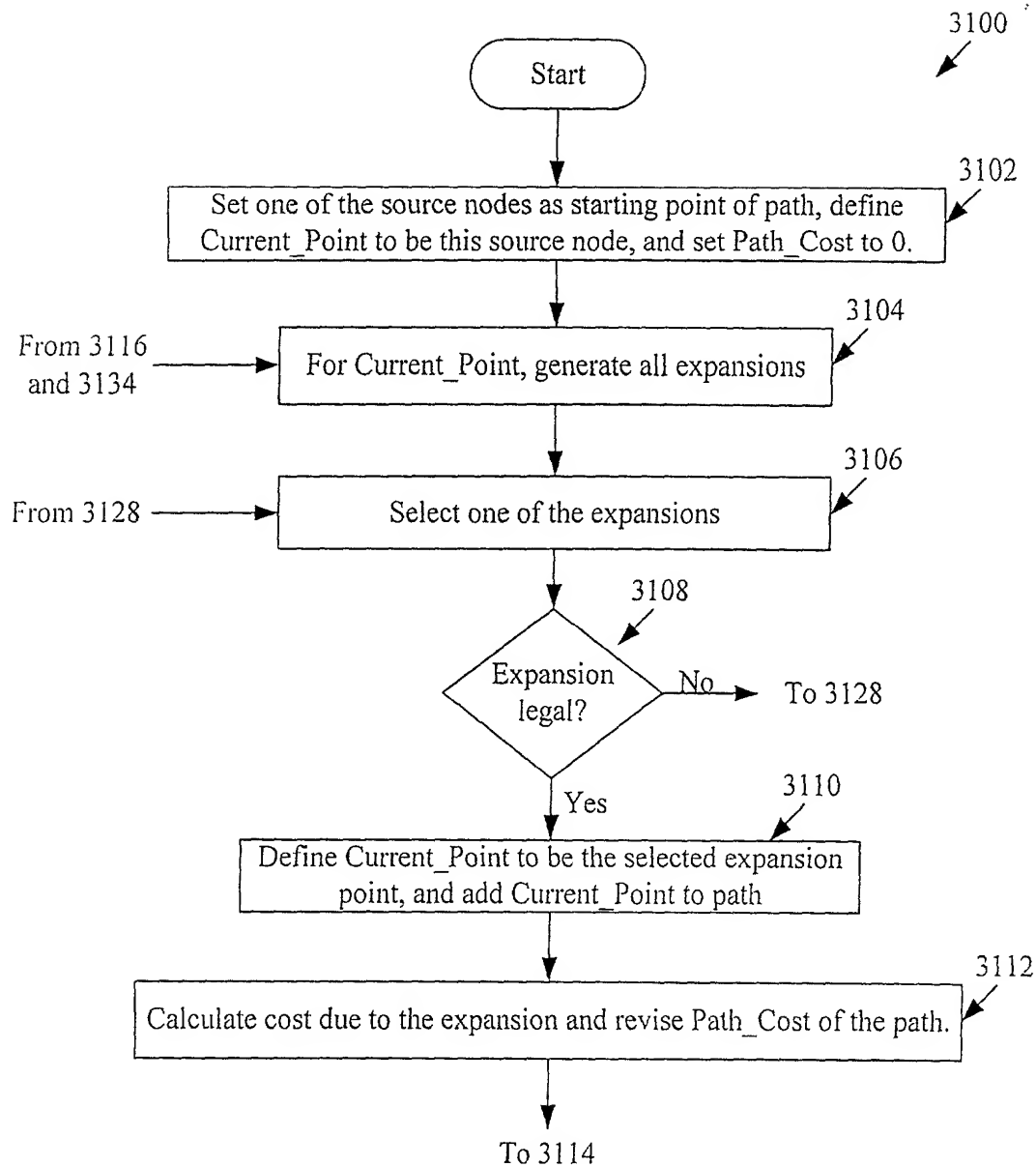


Figure 31A

Figure 31: $\frac{\text{Figure 31A}}{\text{Figure 31B}}$

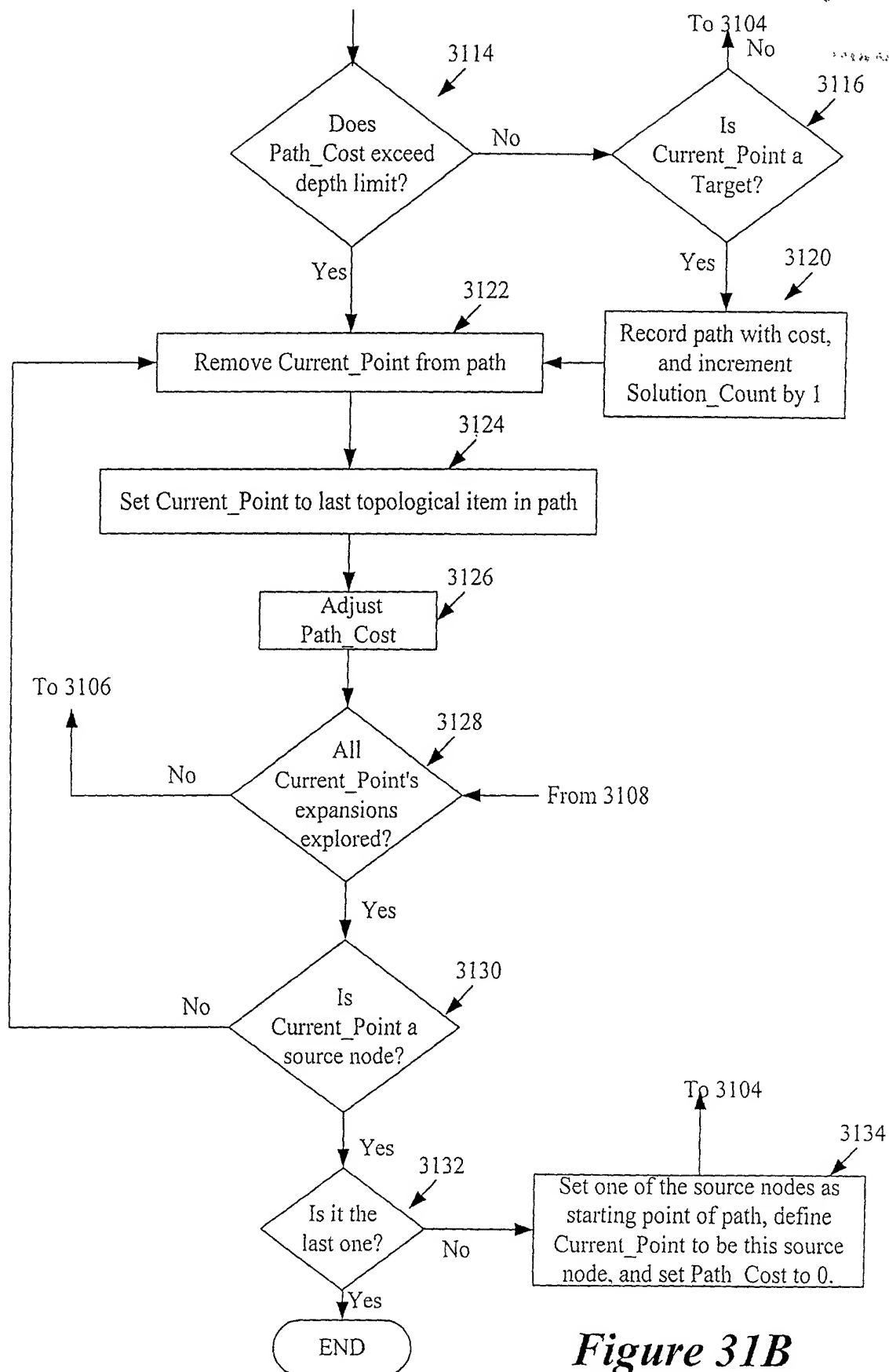


Figure 31B

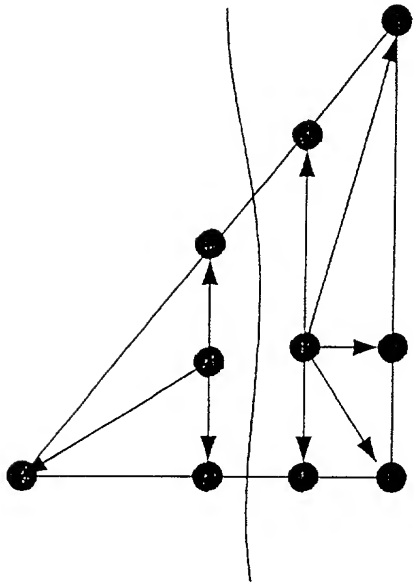


Figure 35

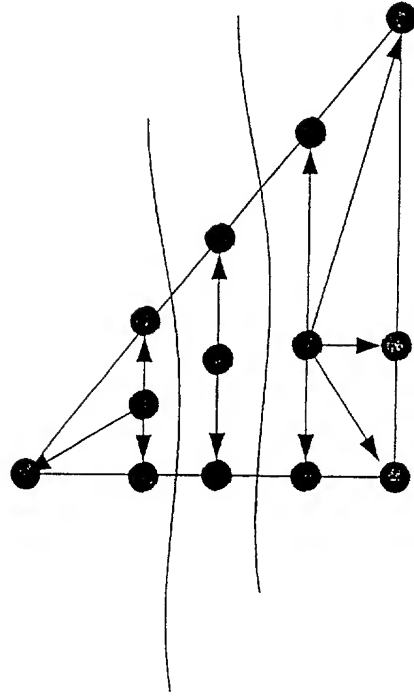


Figure 36

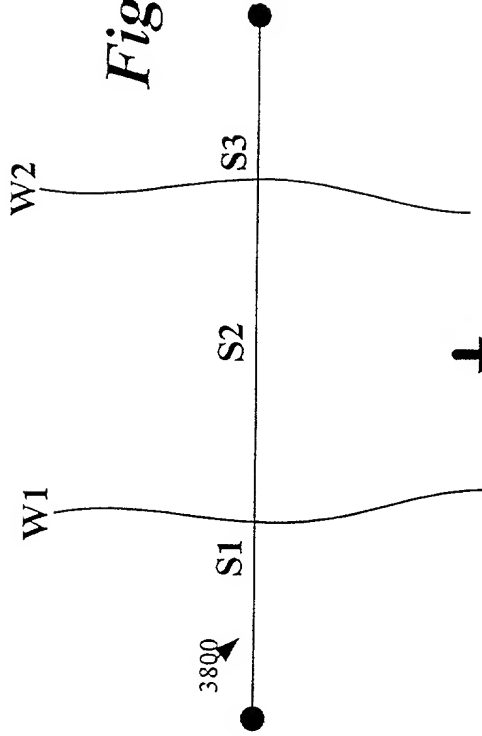


Figure 38A

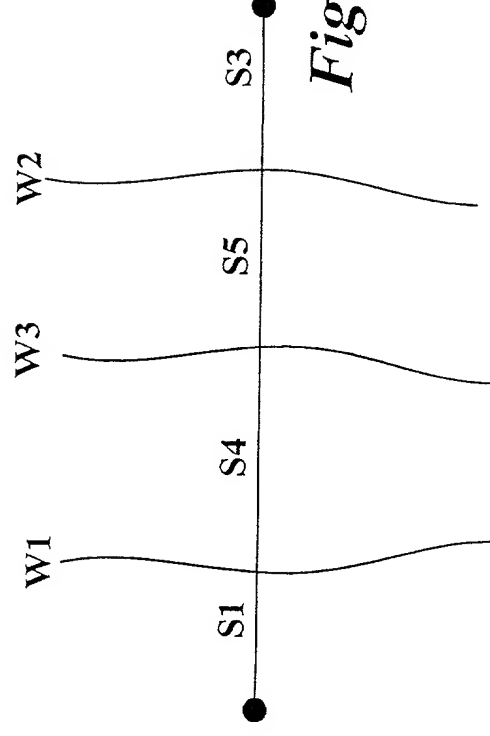


Figure 38B

1. The first row of the table shows the relationship between the 'From' and 'To' items. The 'From' item is 'Node' and the 'To' item is 'Node'. The 'Face Item' is 'Vias' and the 'Edge Item' is 'Planarity, Vias, Edge, Capacity'.

From:	To:	Node	Face Item	Edge Item
Node	• Planarity • Vias	• Vias	• Vias	• Planarity • Vias • Edge • Capacity
Face Item	• Vias		• Vias	• Vias • Edge • Capacity
Edge Item	• Planarity • Vias		• Vias	• Planarity • Vias • Edge • Capacity

Figure 37

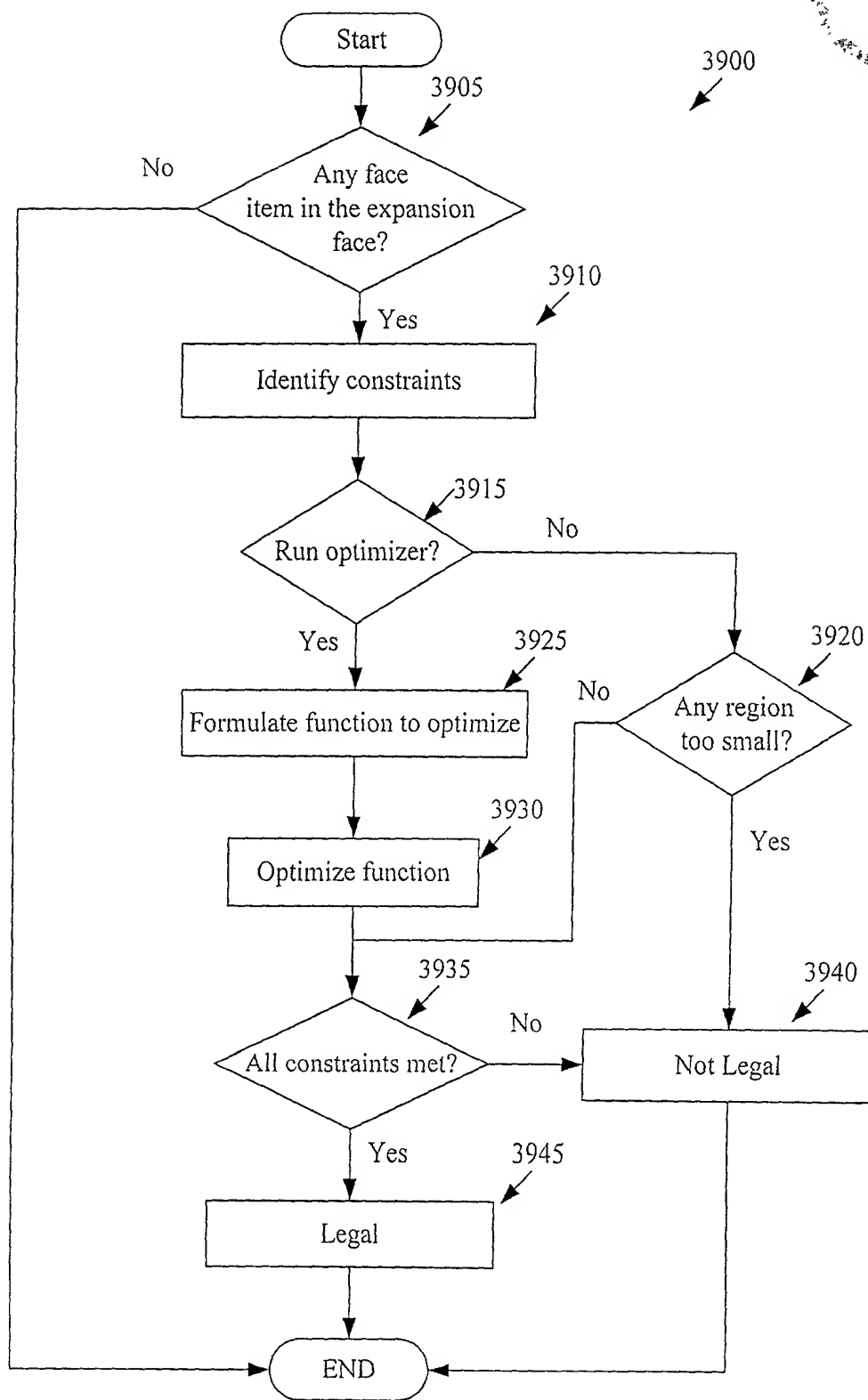


Figure 39A

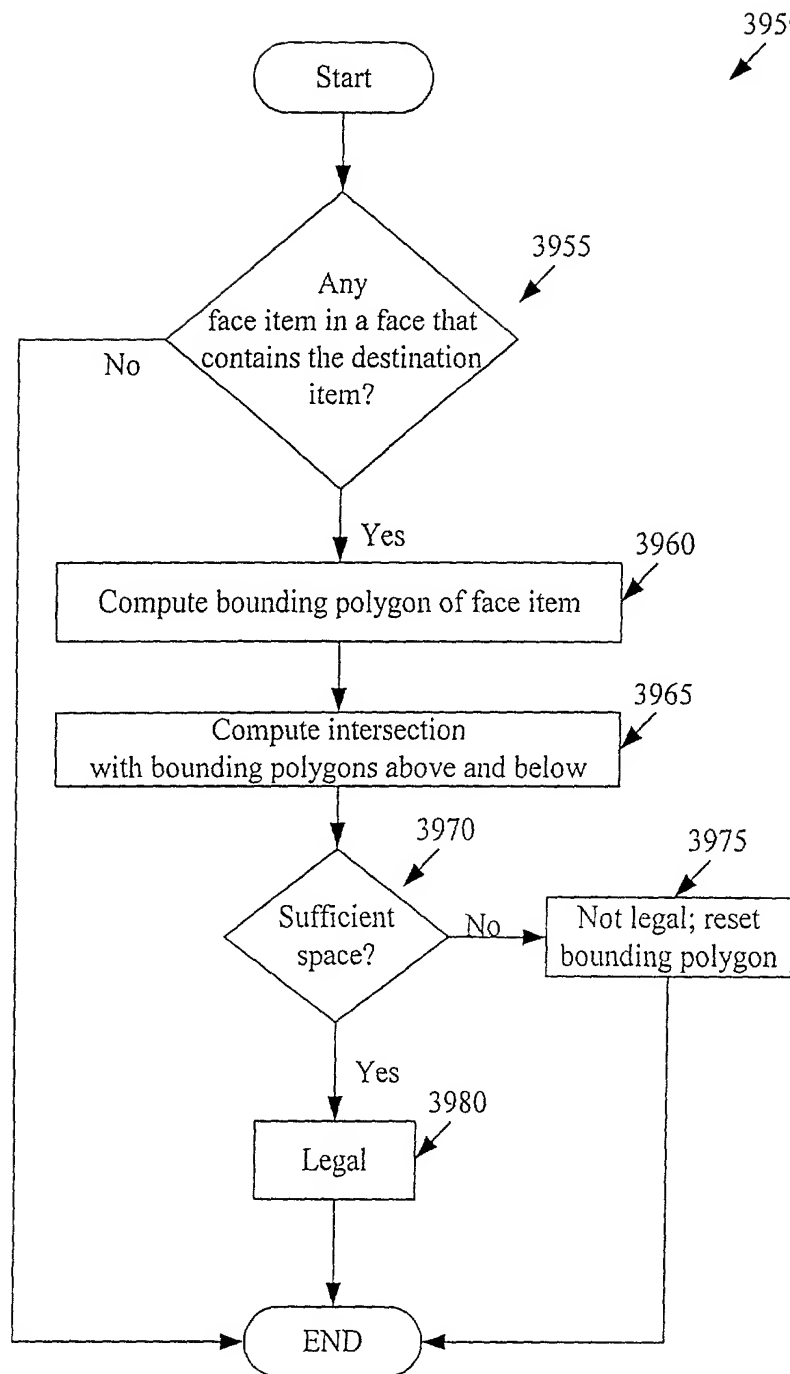


Figure 39B

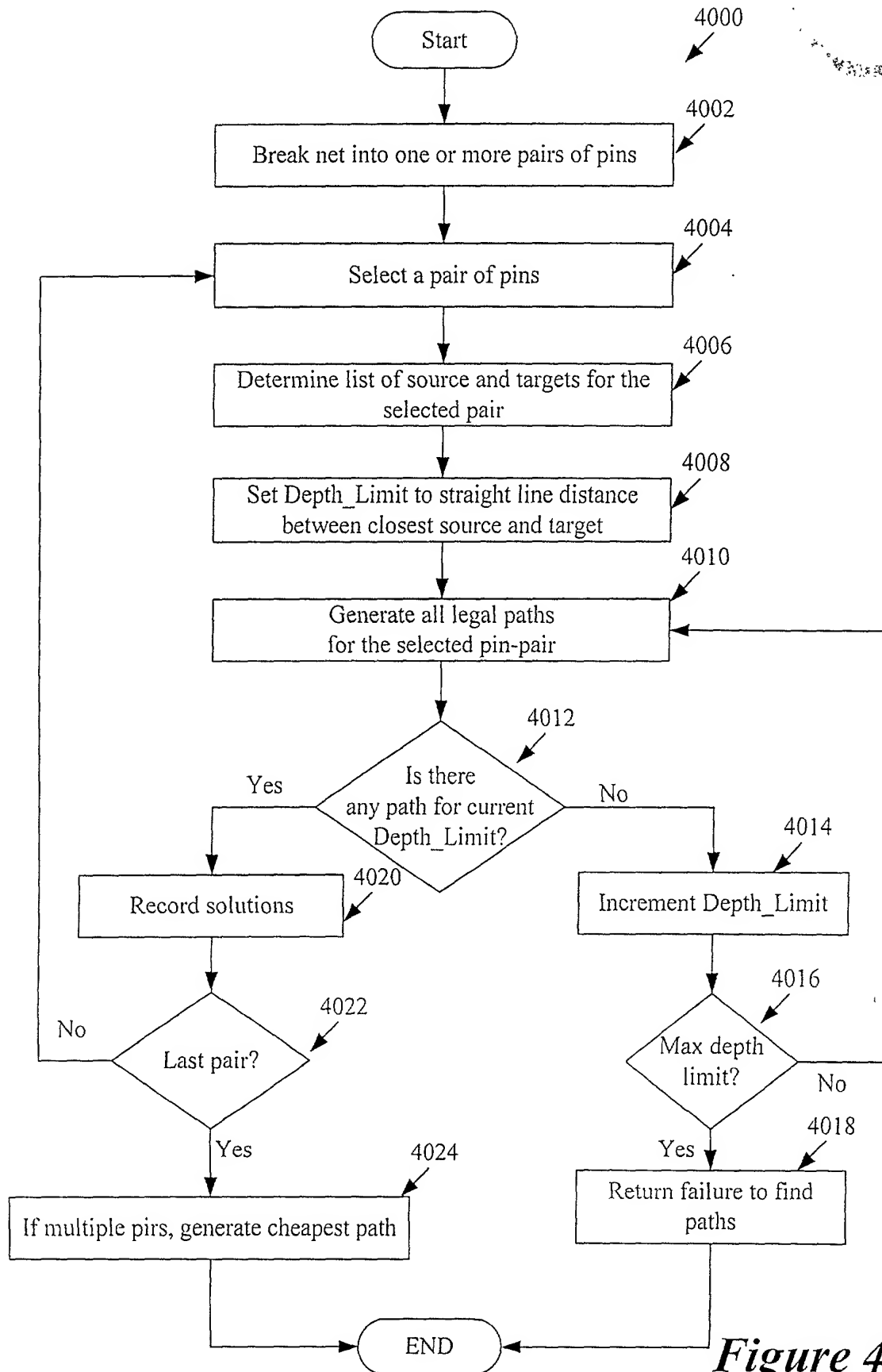


Figure 40

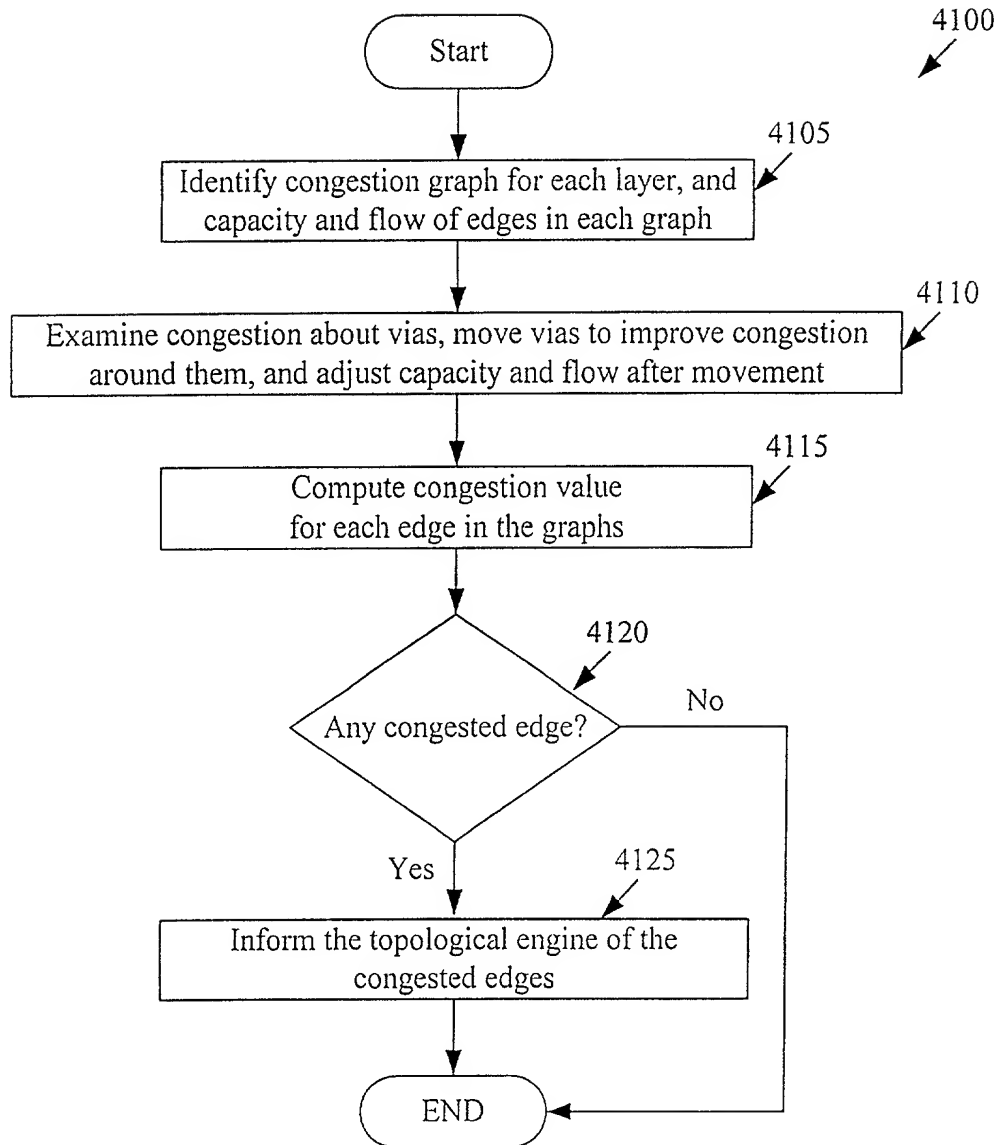


Figure 41

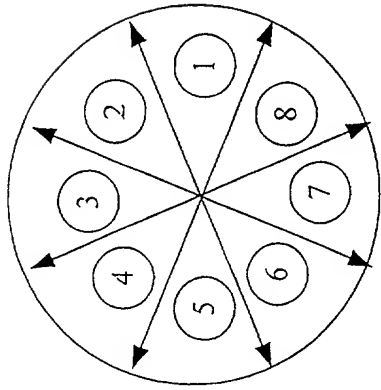


Figure 42

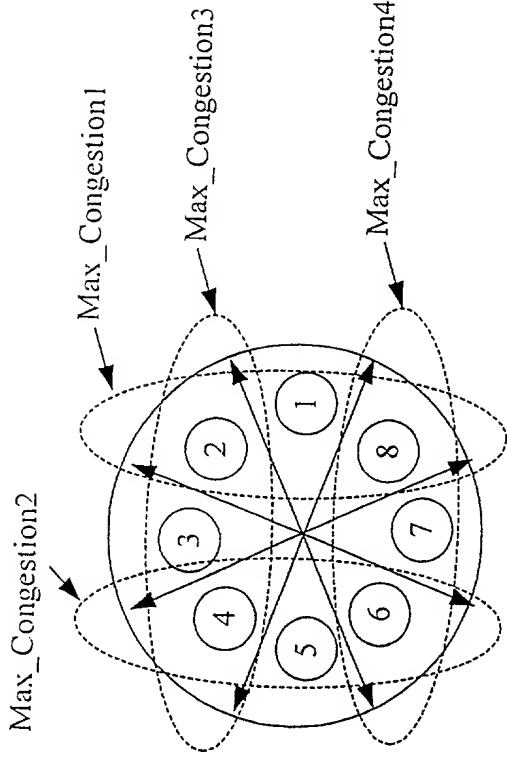


Figure 44

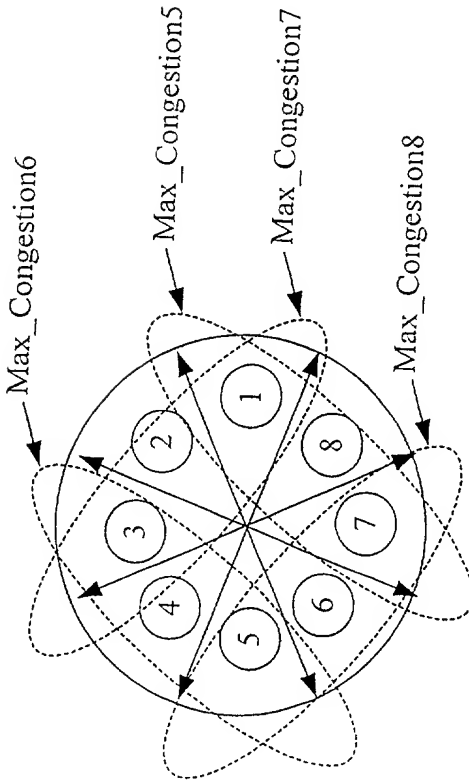


Figure 45

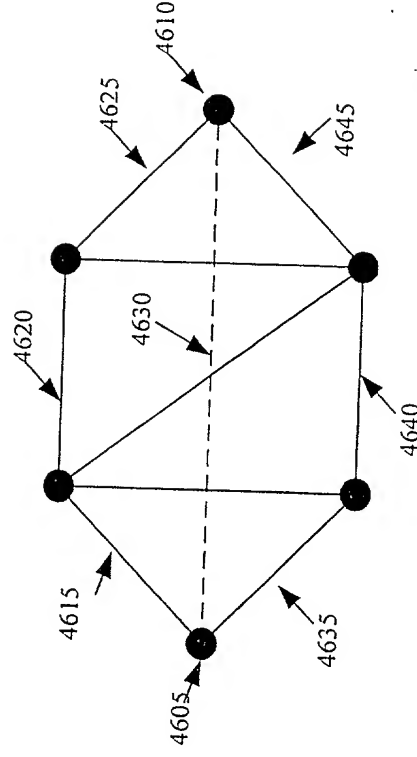


Figure 46

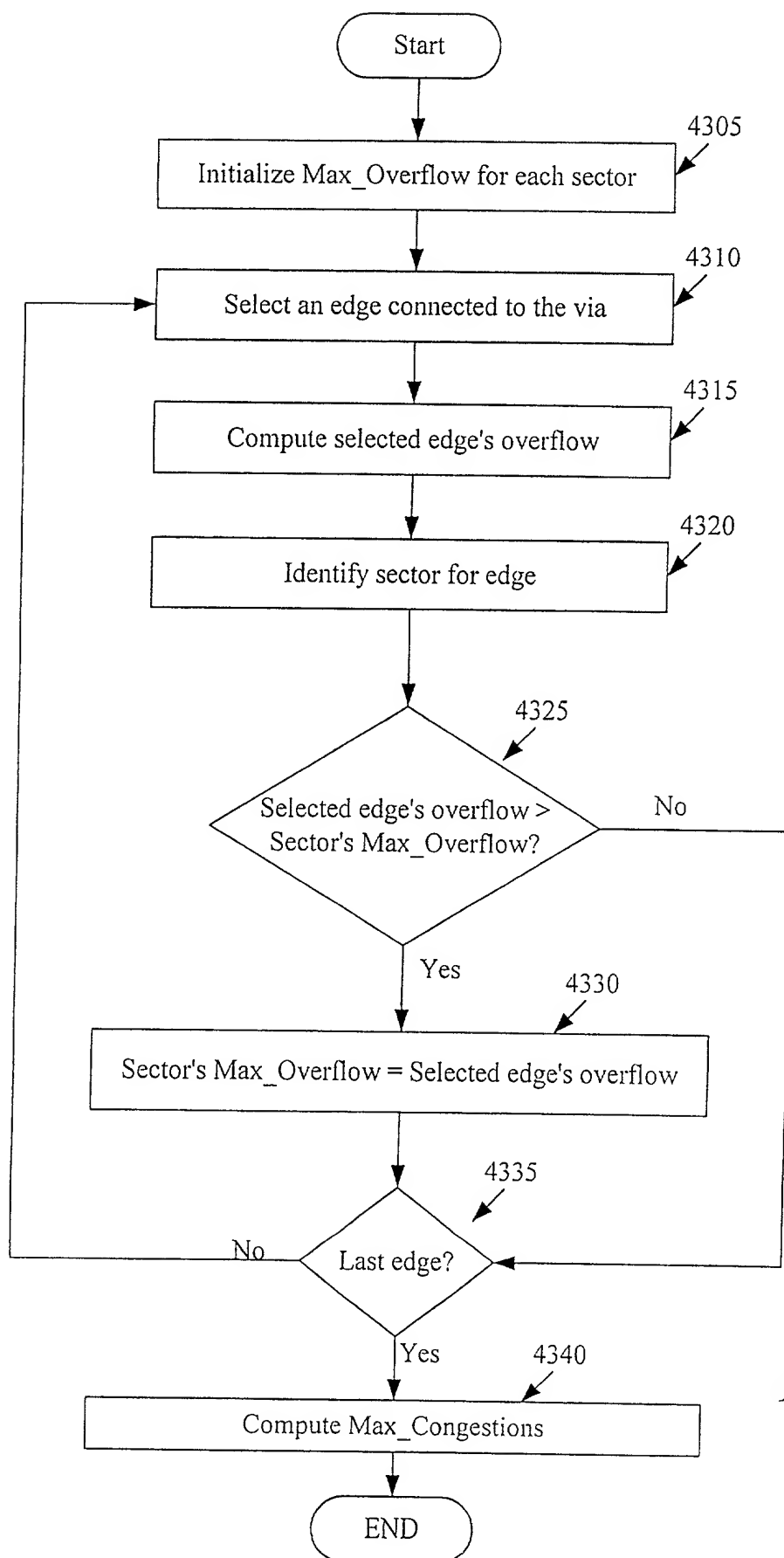


Figure 43

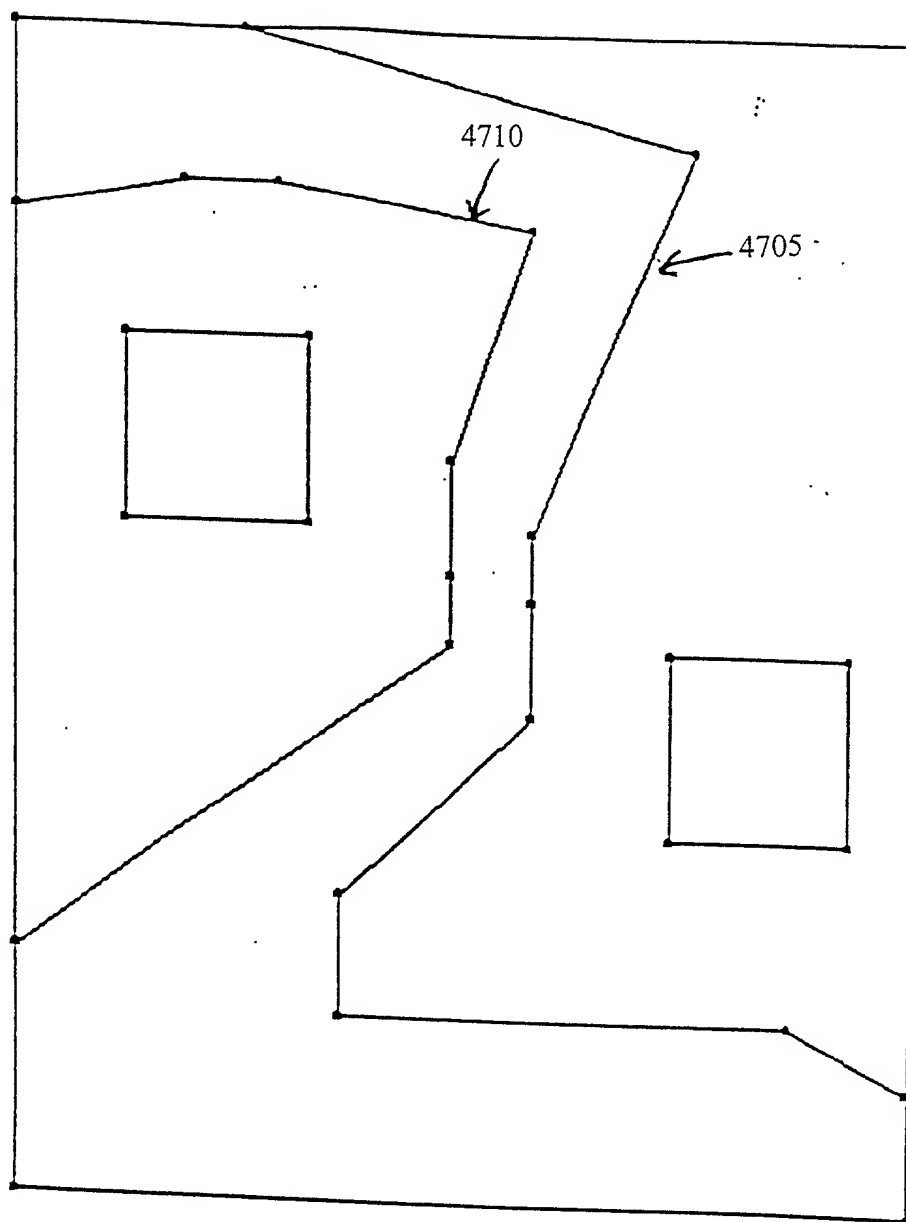


FIGURE 47

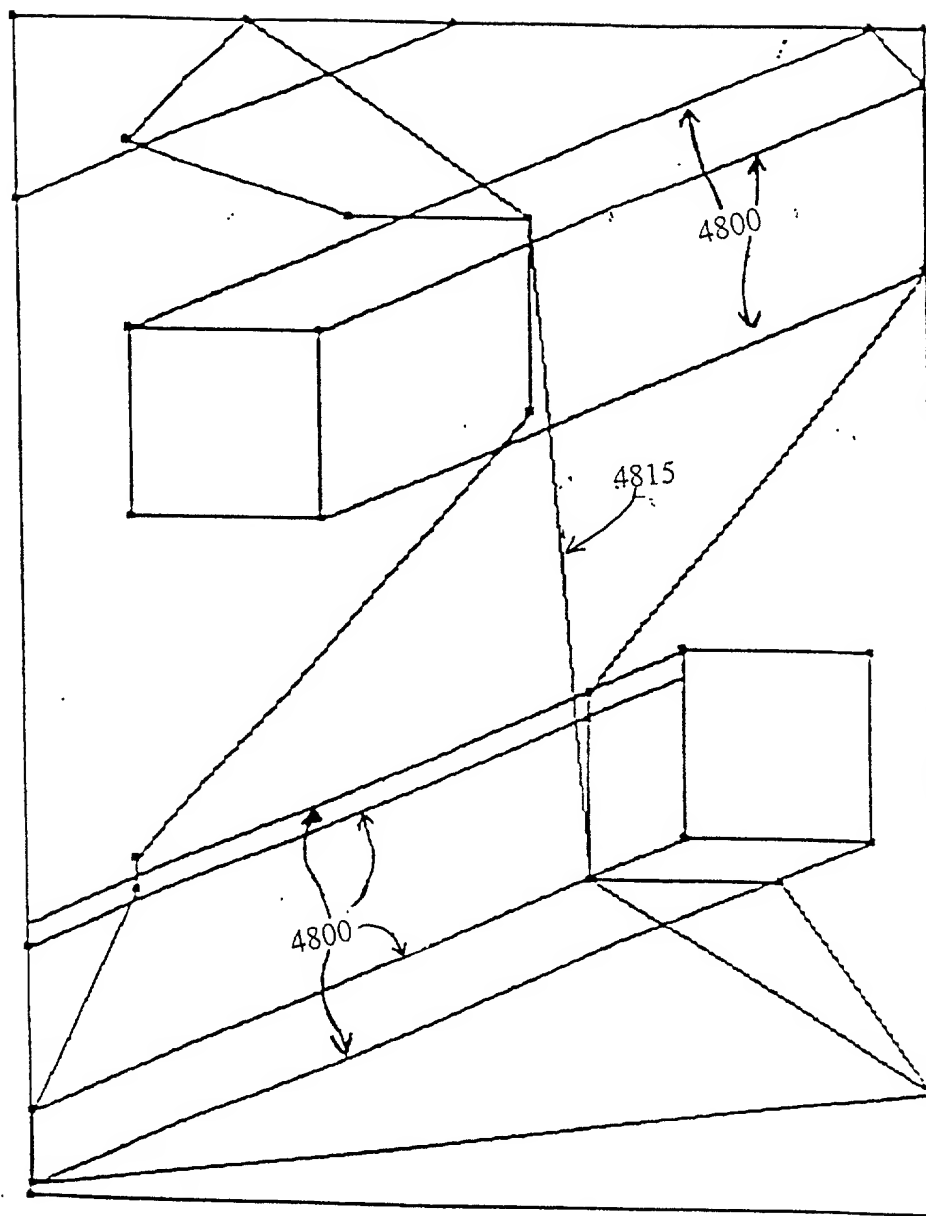


FIGURE 48A

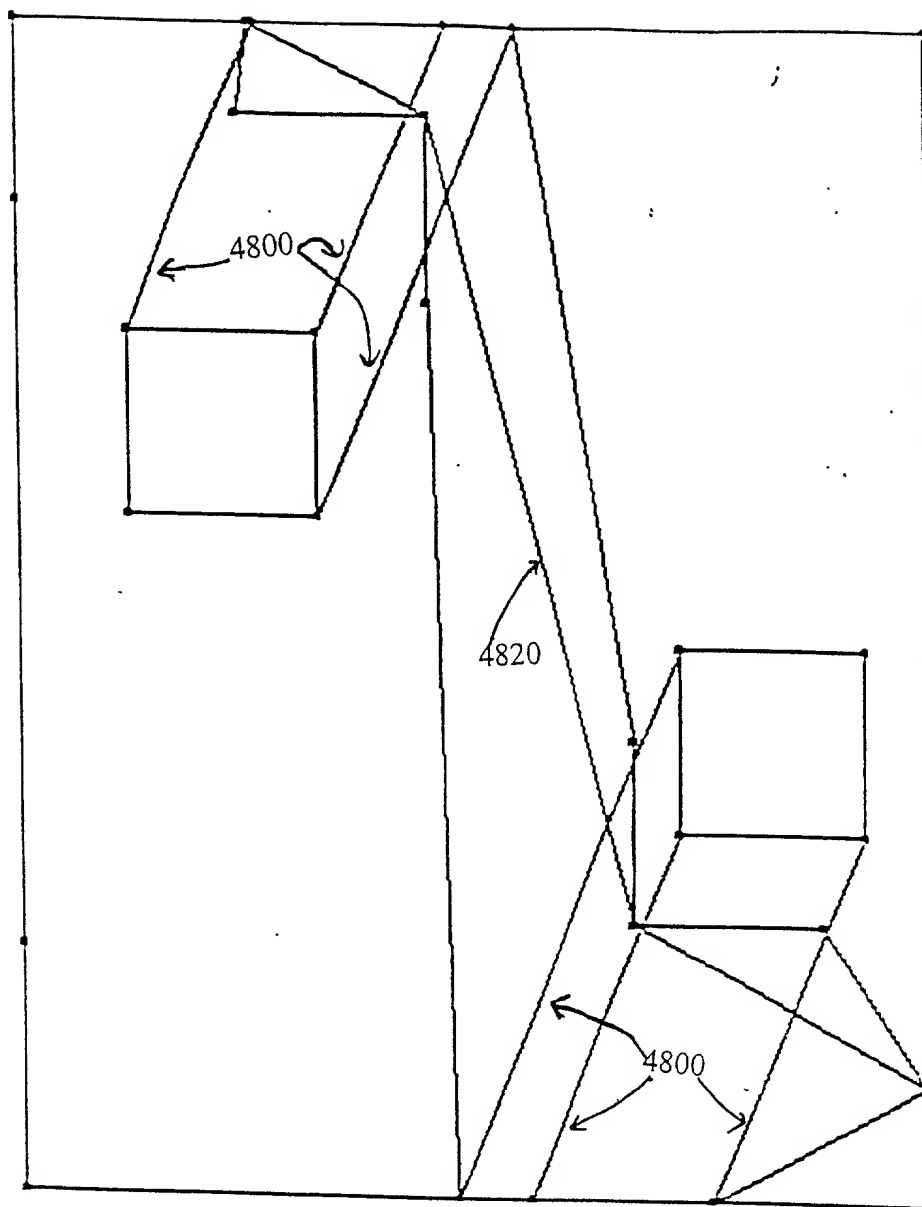


FIGURE 48B

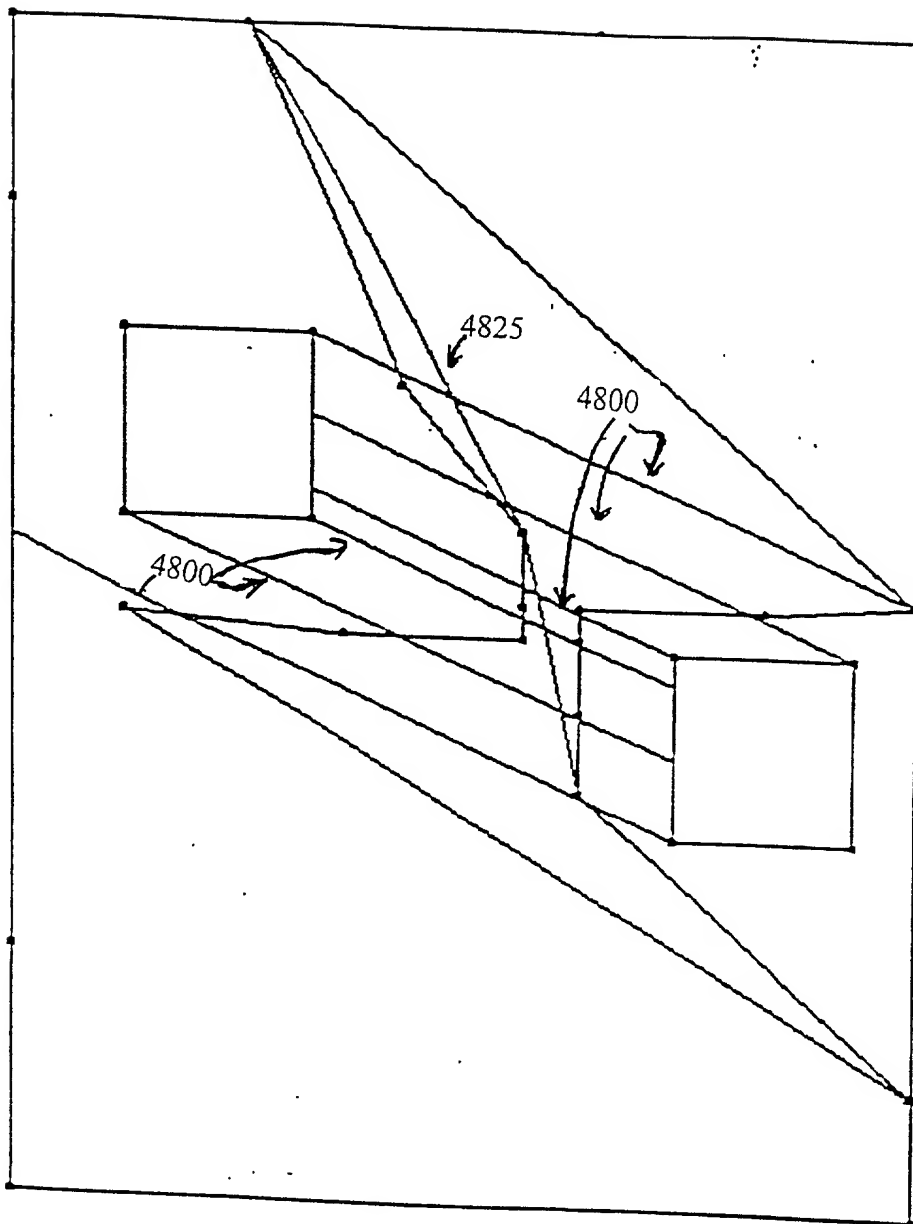


FIGURE 48C

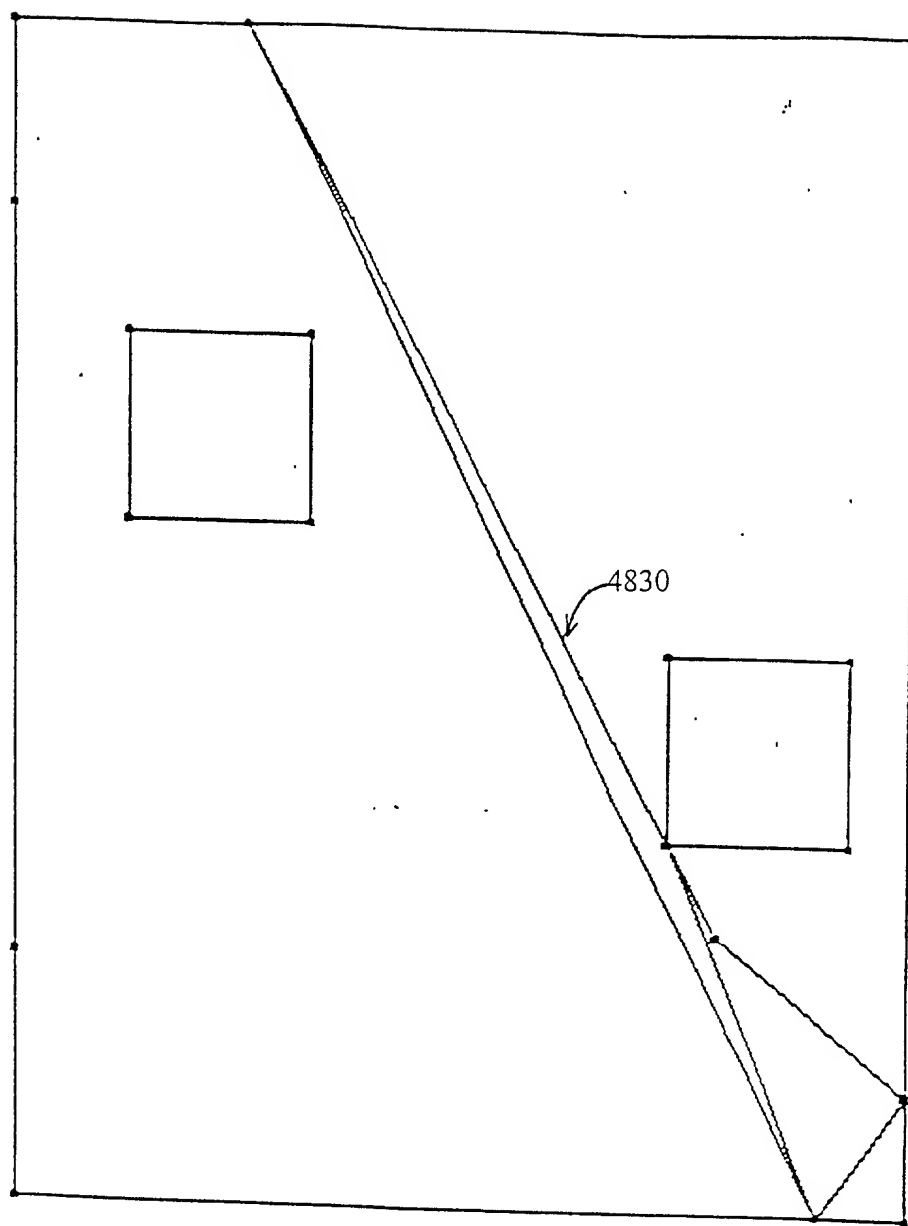


FIGURE 48D

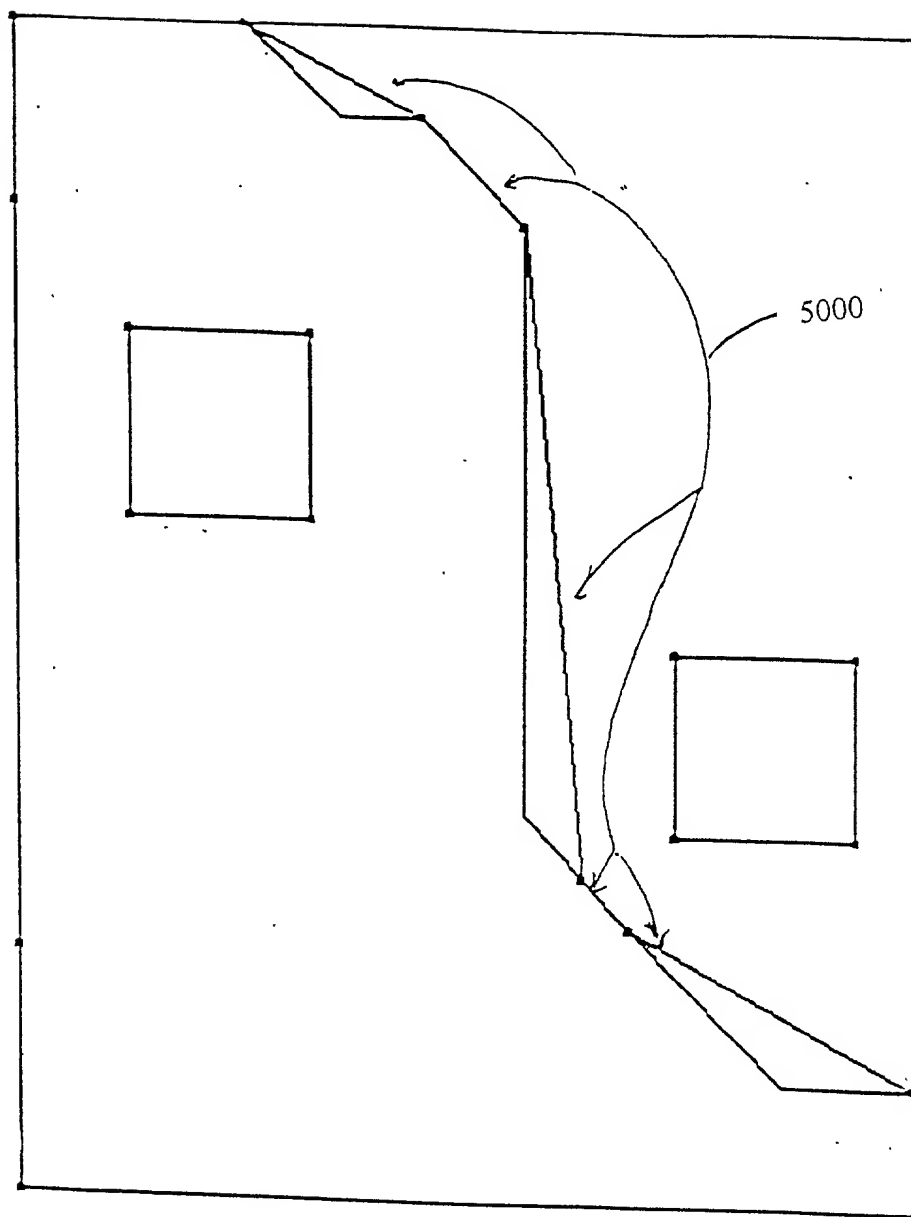


FIGURE 50

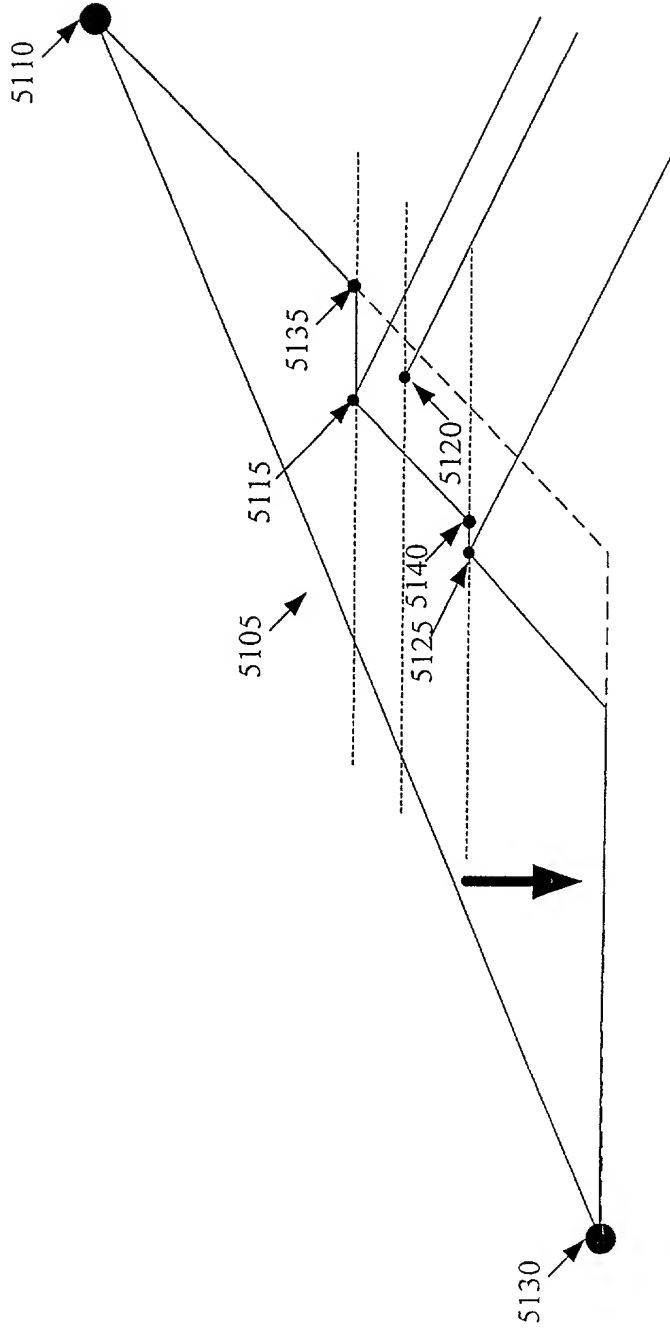


Figure 51

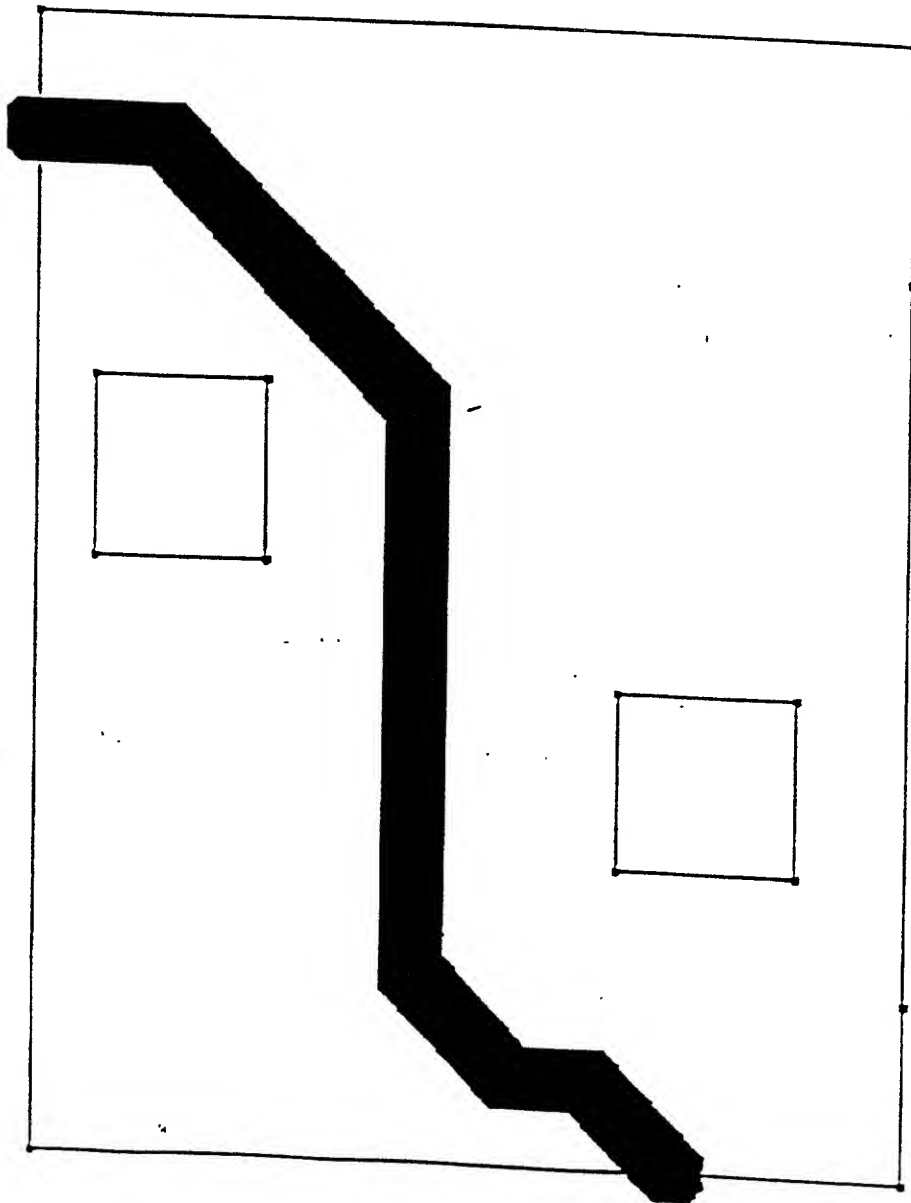


FIGURE 52

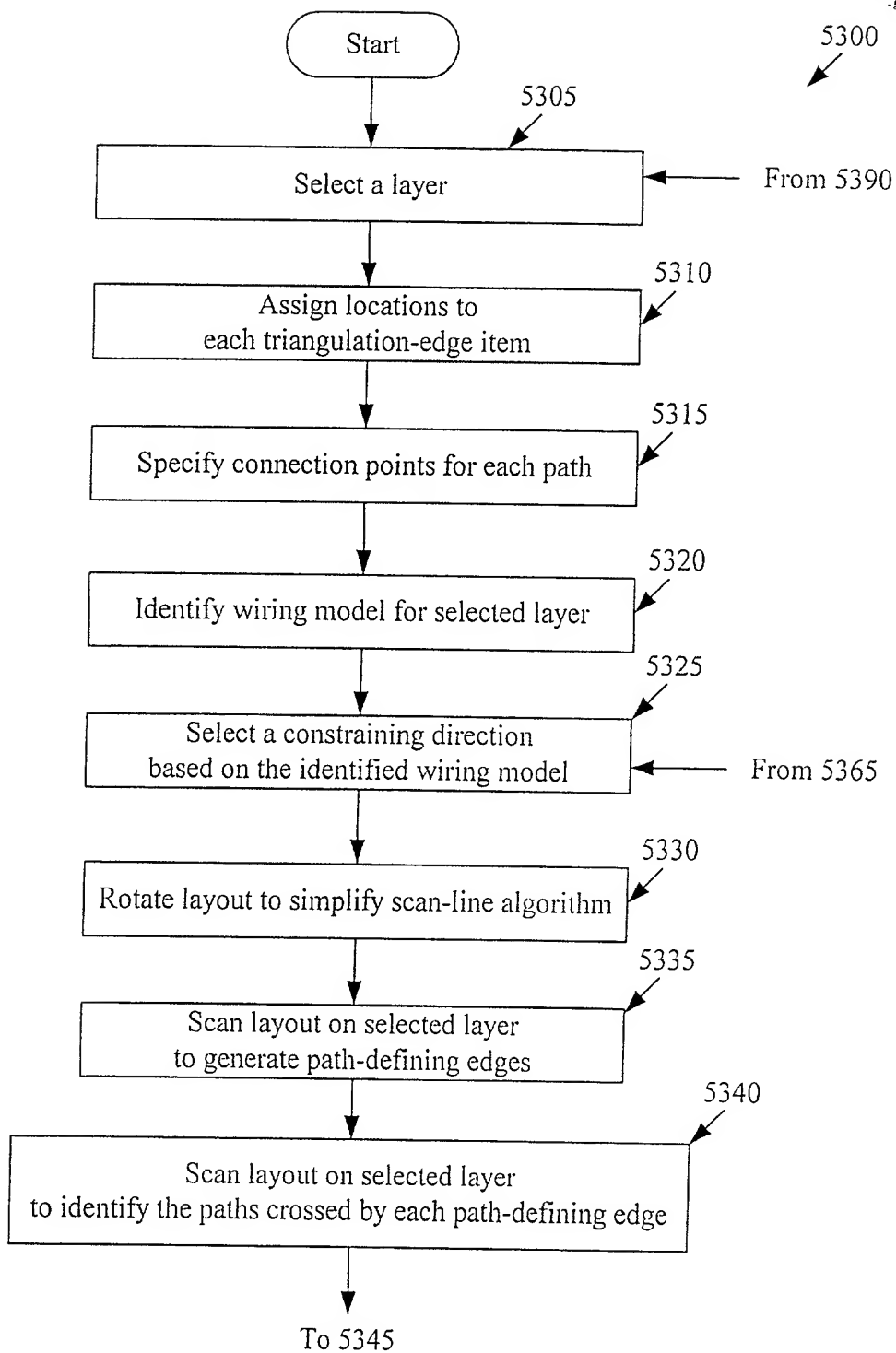


Figure 53

Figure 53: Figure 53A
Figure 53B

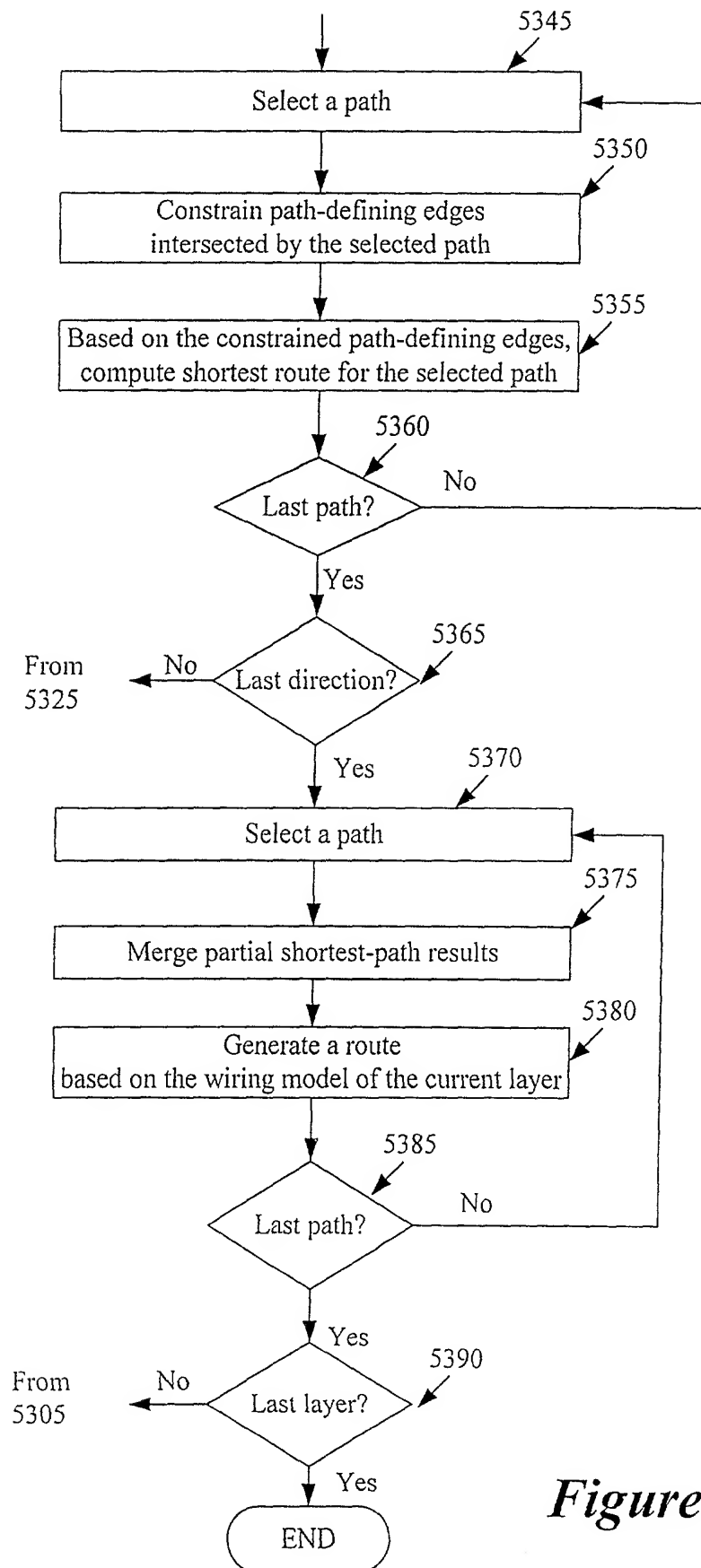


Figure 53B

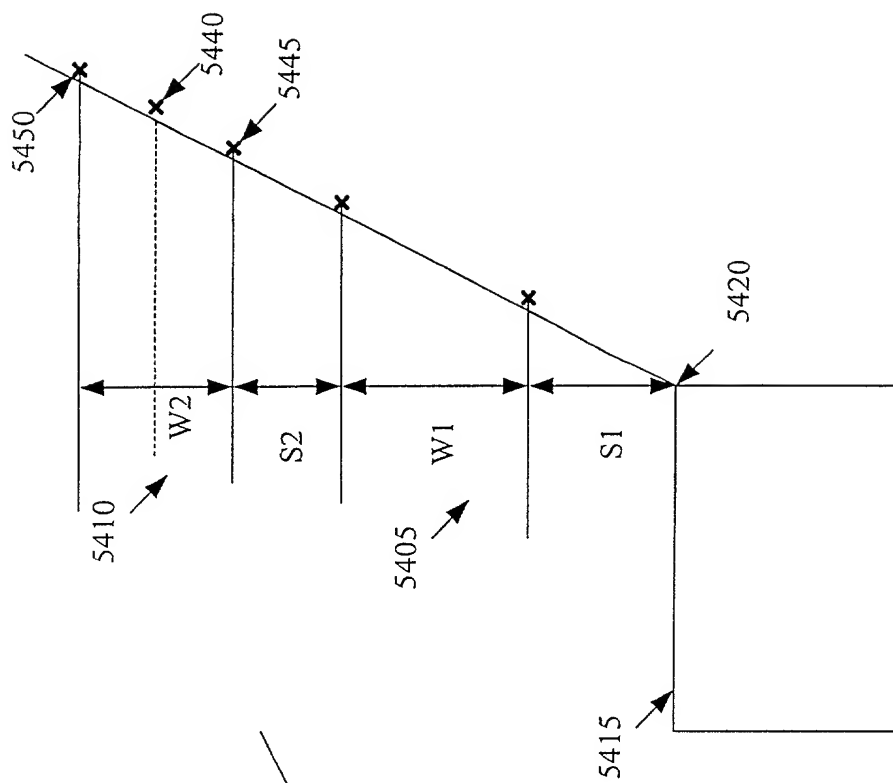


Figure 55

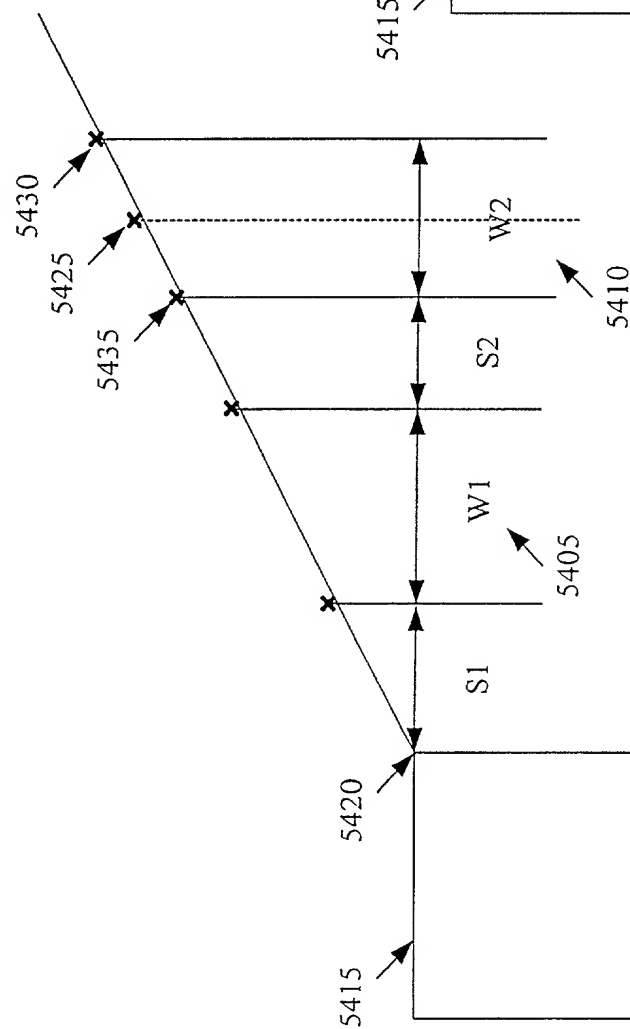


Figure 54

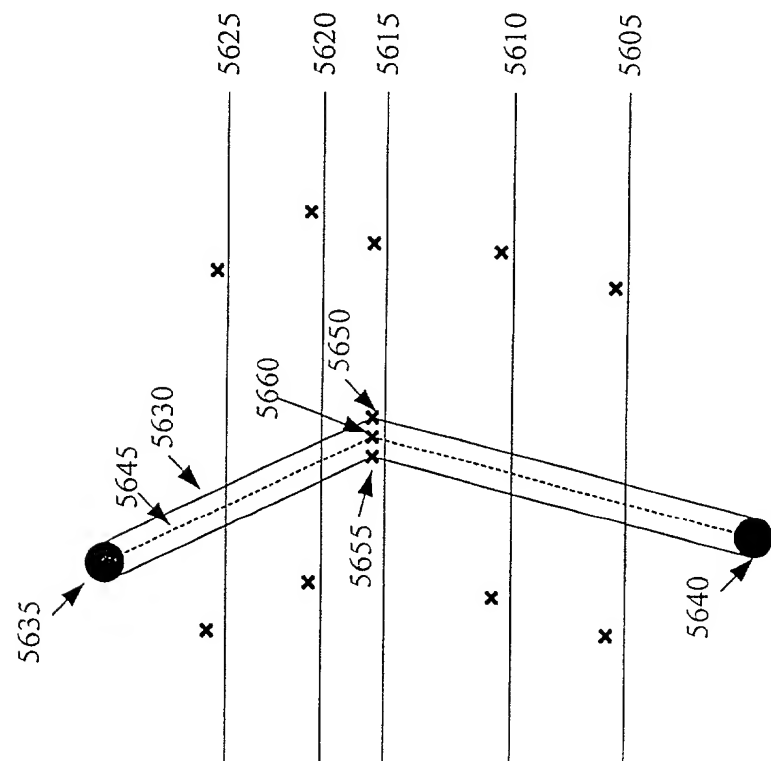


Figure 56

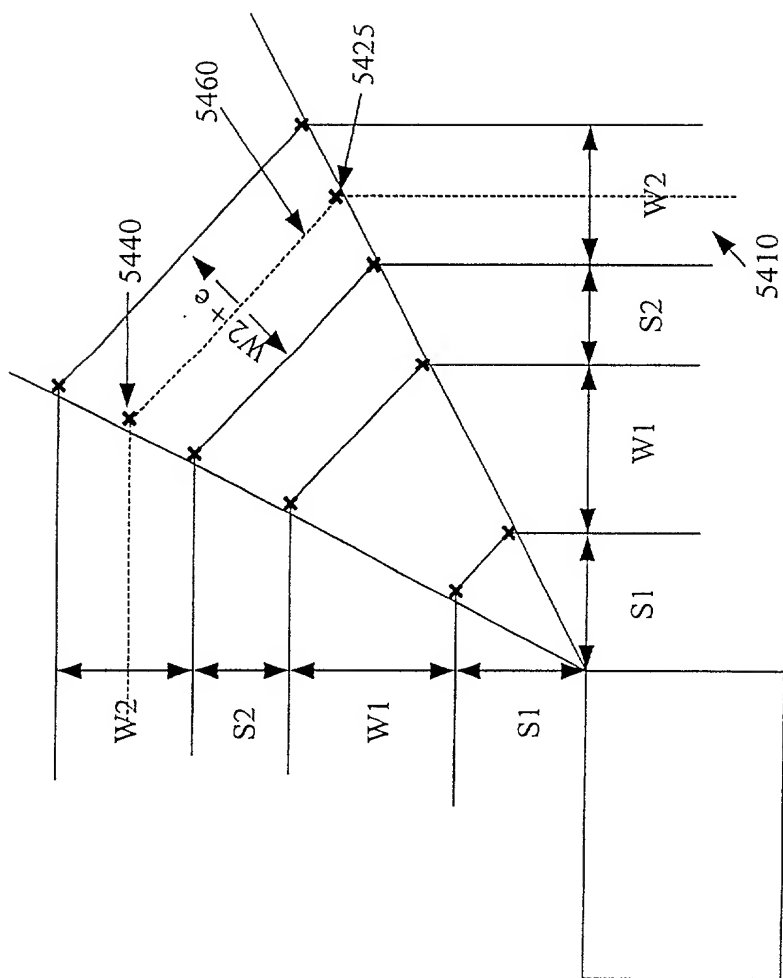


Figure 57

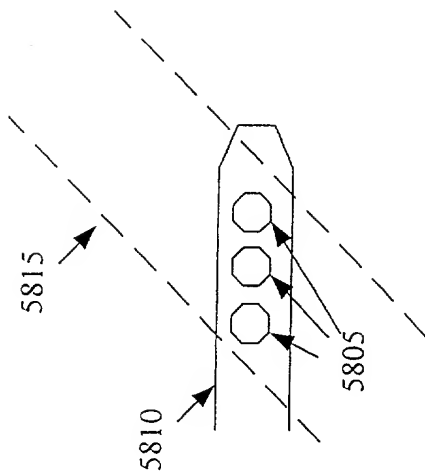


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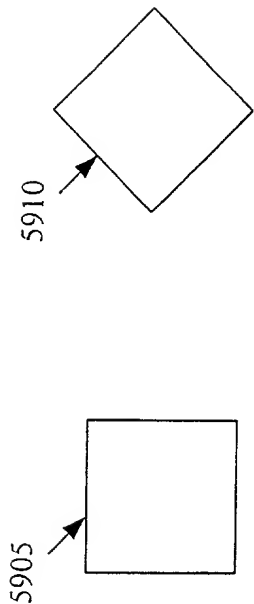


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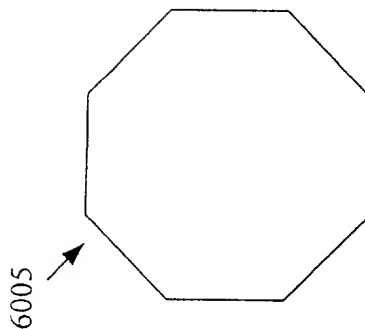


Figure 60

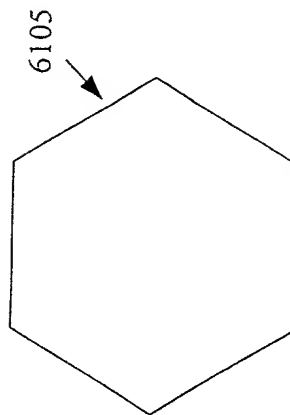


Figure 61

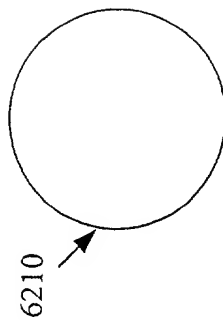


Figure 62

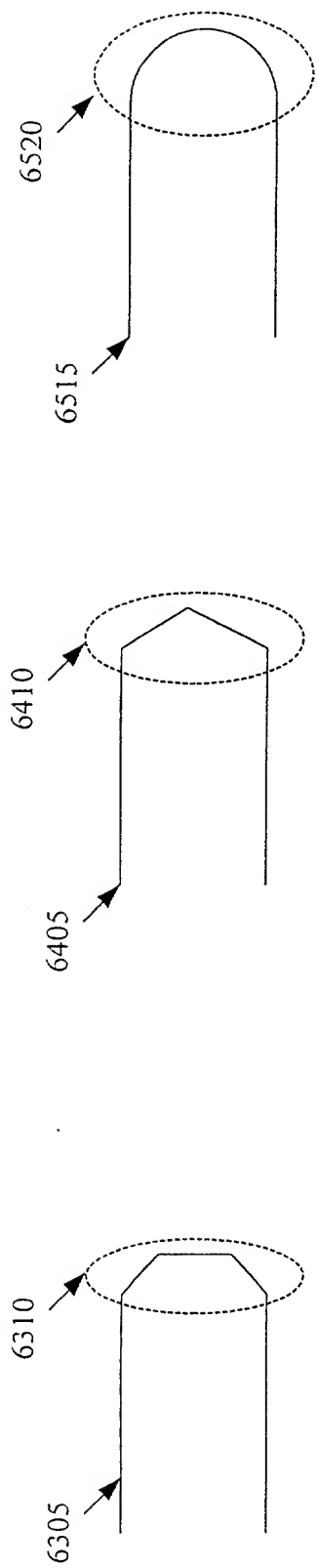


Figure 63

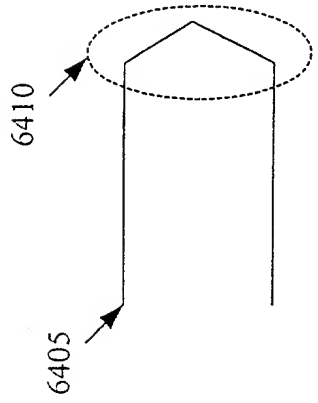


Figure 64

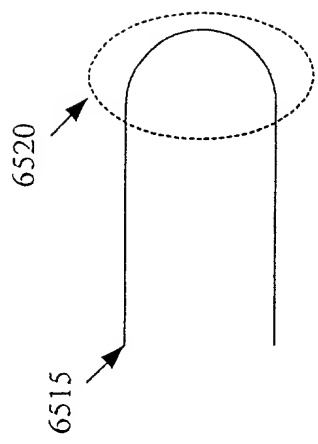


Figure 65

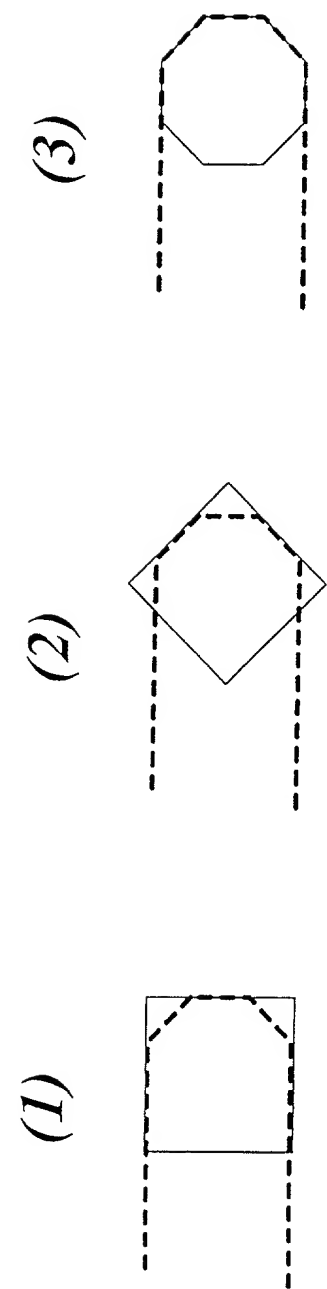
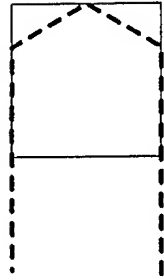


Figure 66



(1)



(2)

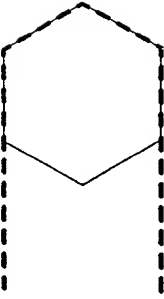


Figure 67

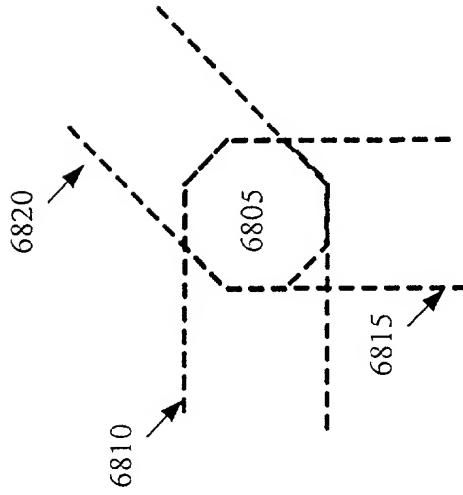


Figure 68

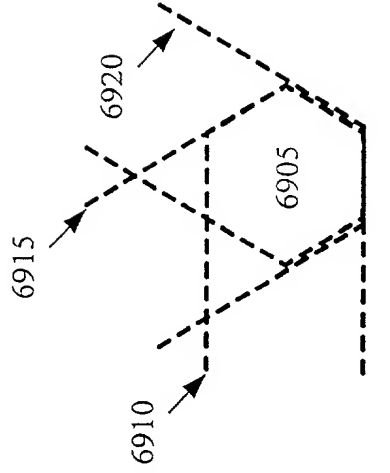


Figure 69

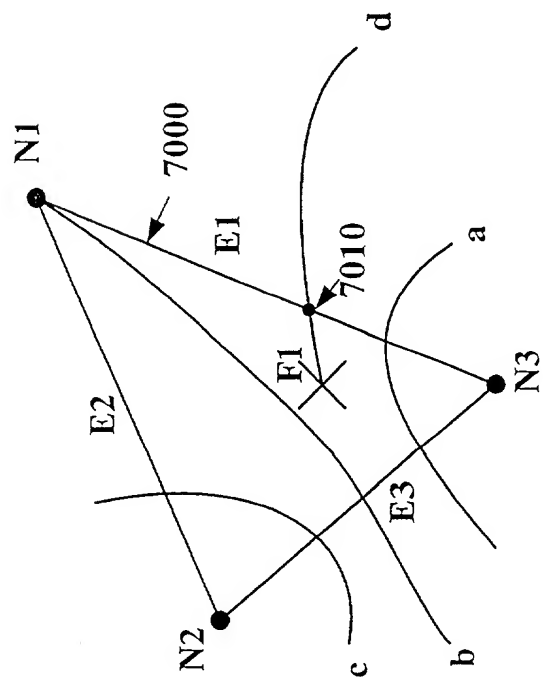


Figure 70

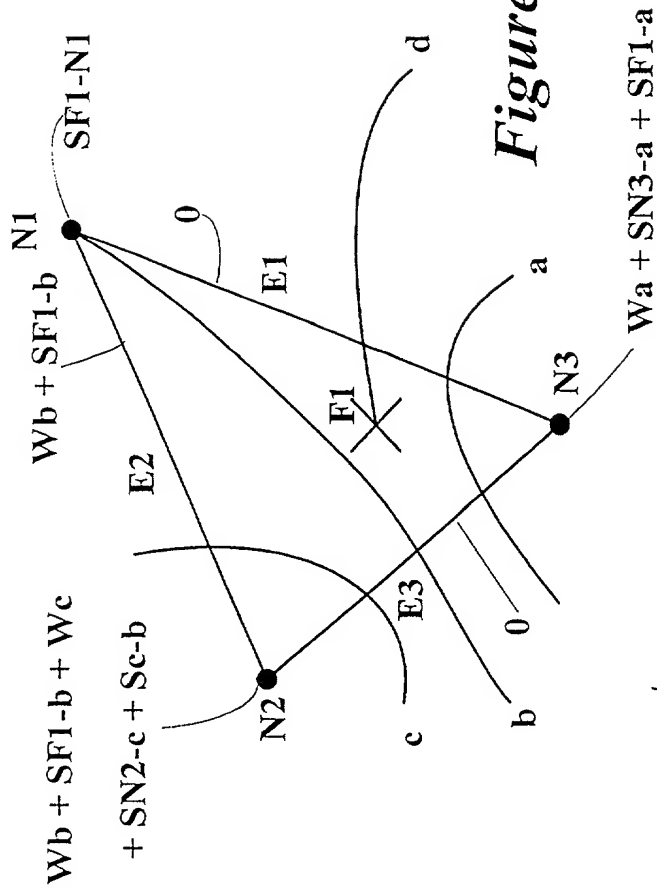


Figure 71

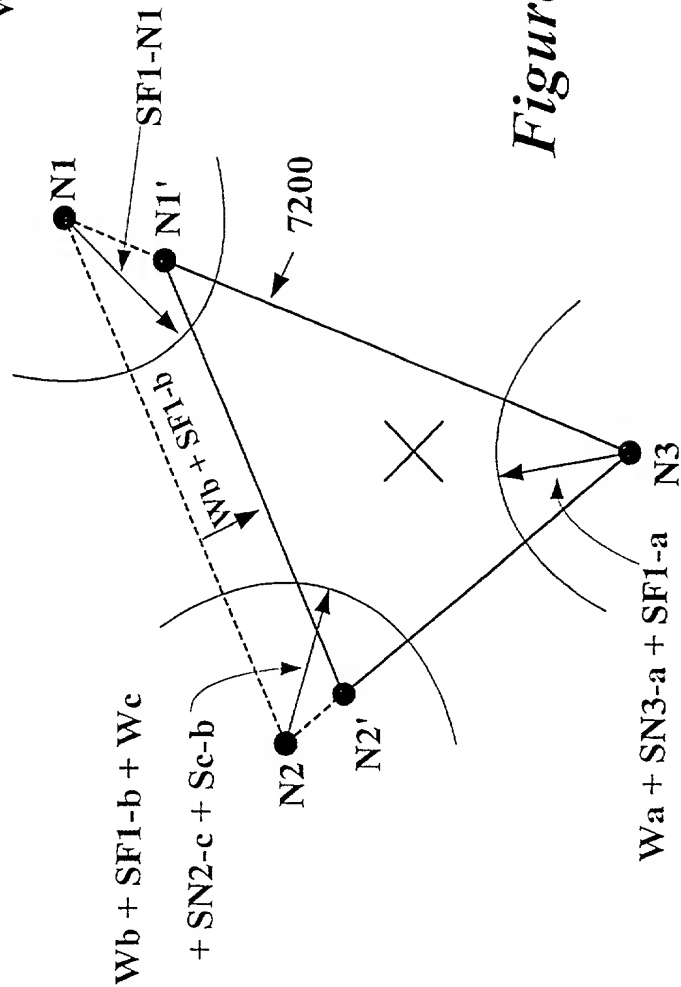


FIG. 73. A diagram showing a network of nodes and edges. The nodes are labeled N1, N2, N3, N4, N5, N6, N7, N8, N9. The edges are labeled E1, E2, E3, E4, E5, E6, E7, E8, E9. The diagram is a complex graph with many connections between the nodes.

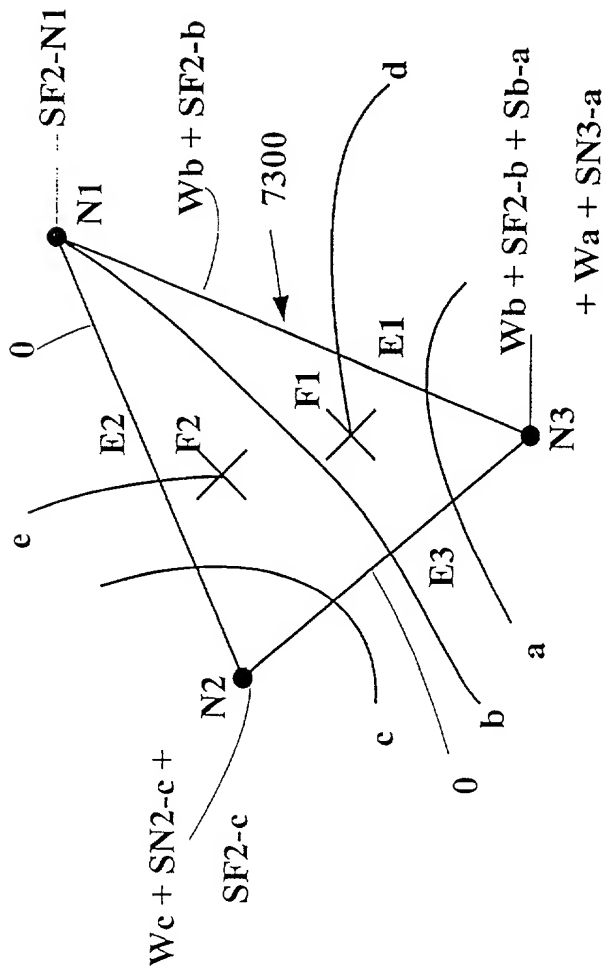


Figure 73

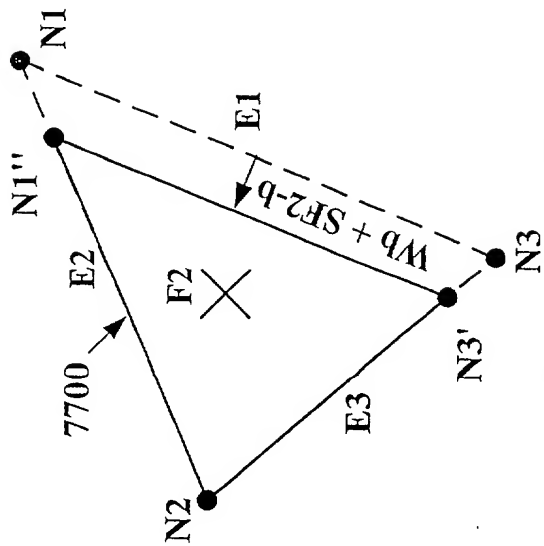


Figure 77

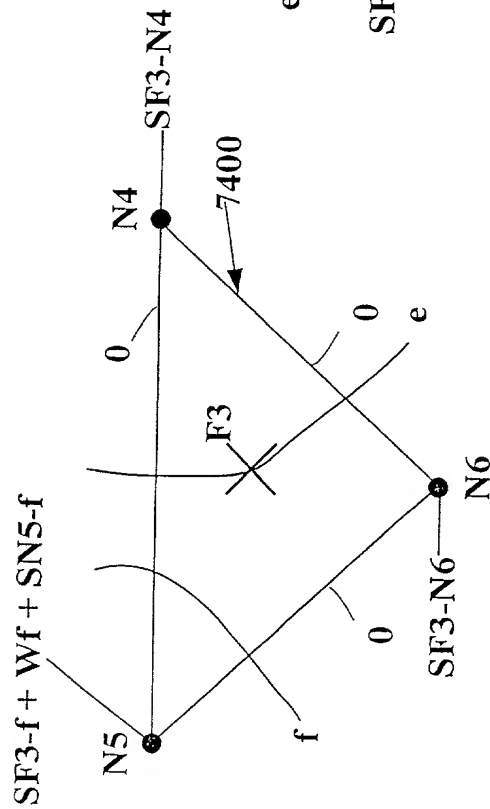


Figure 74

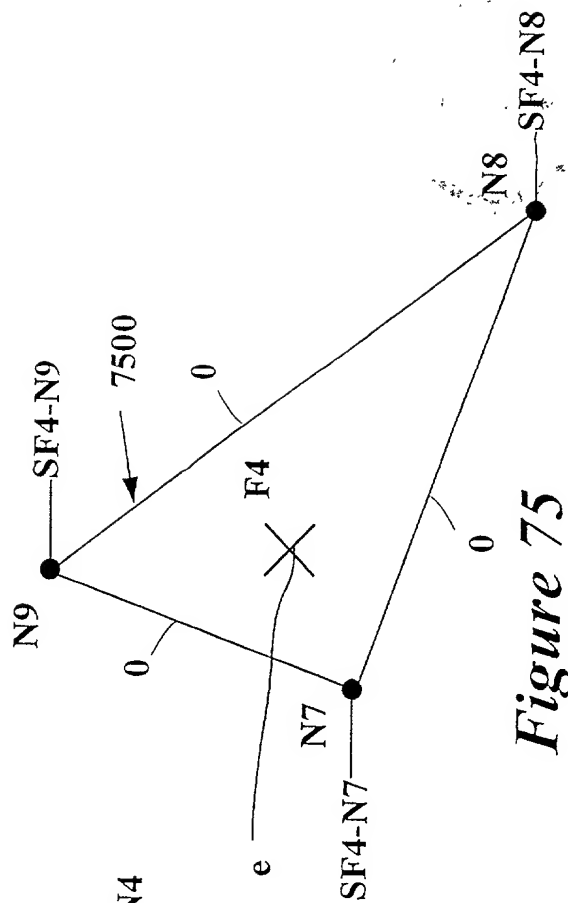


Figure 75

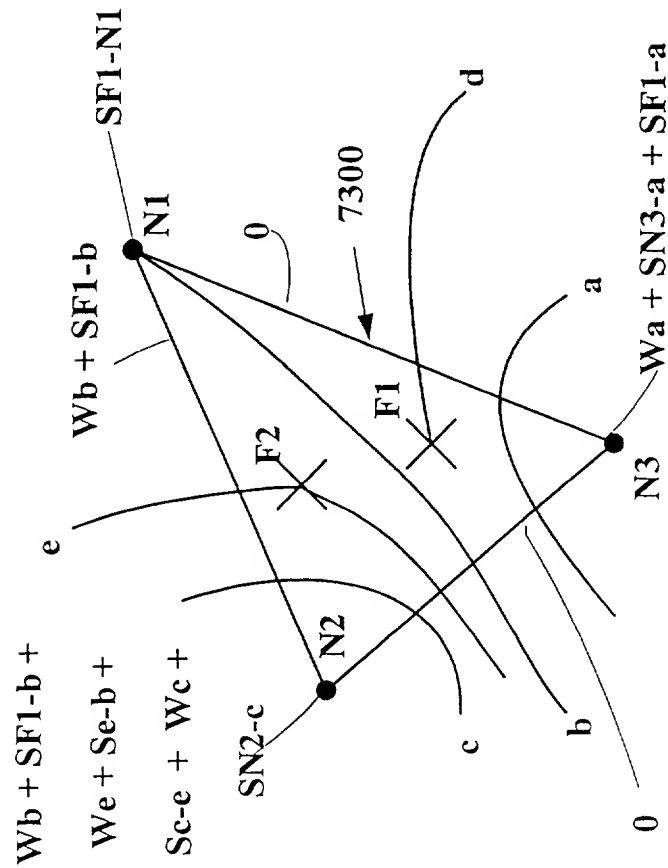


Figure 76

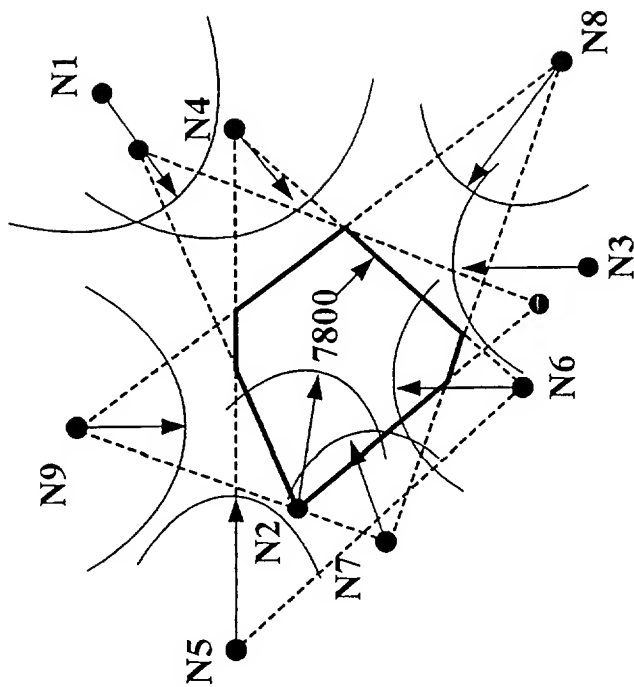


Figure 78

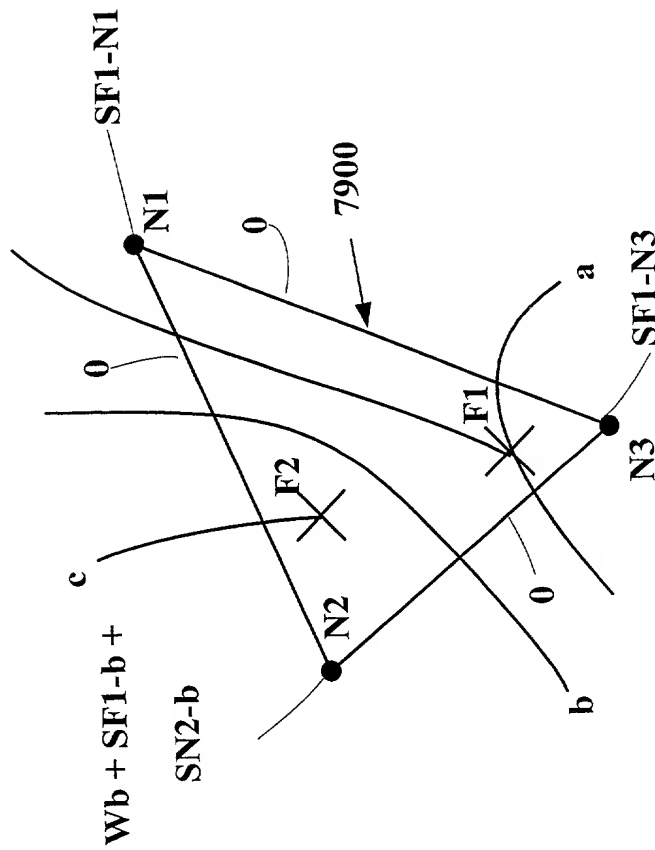


Figure 79

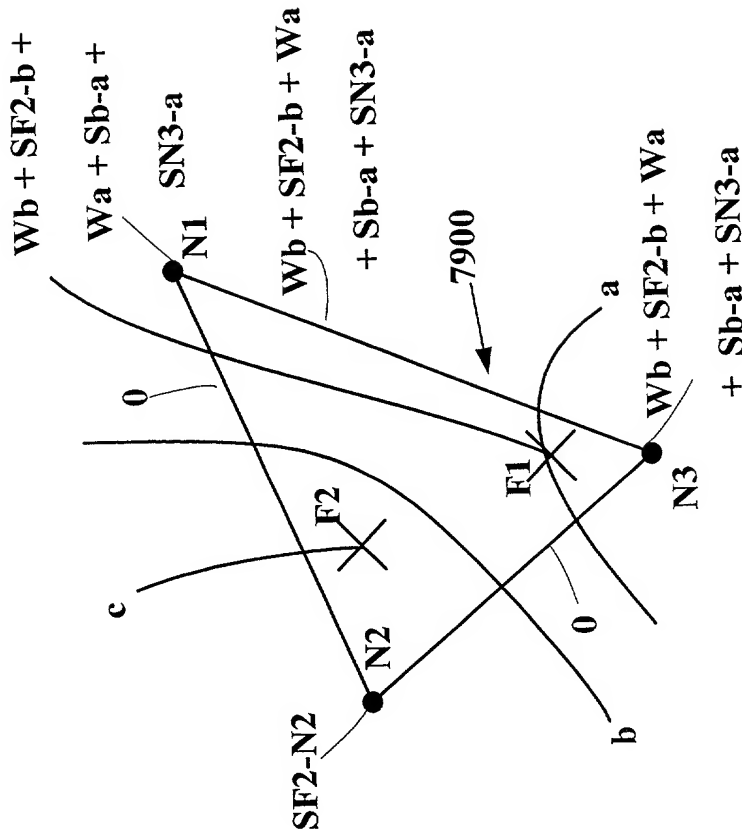


Figure 80

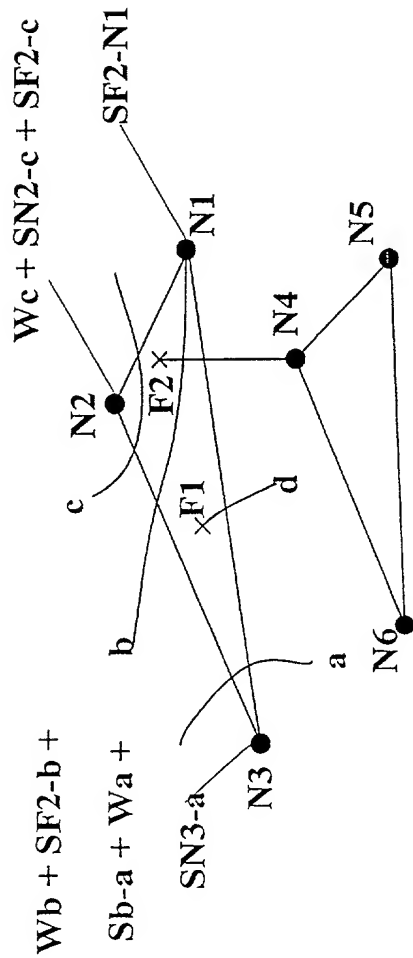


Figure 81

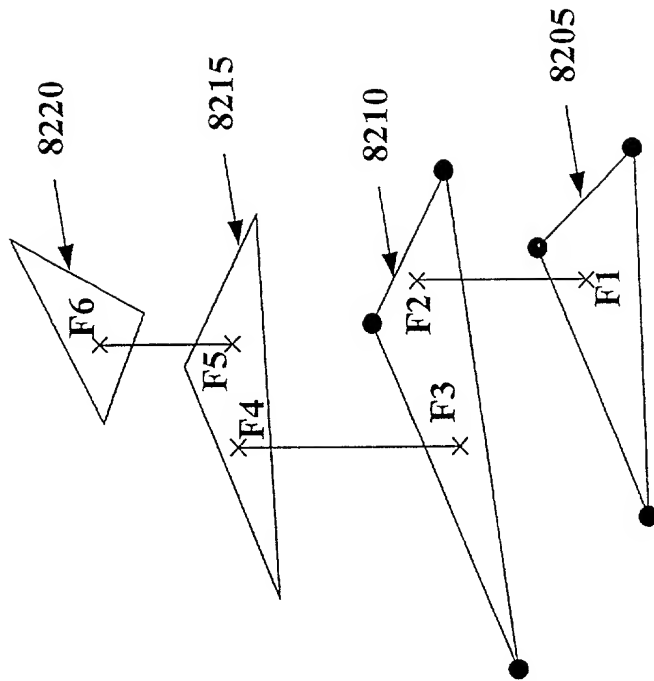


Figure 82

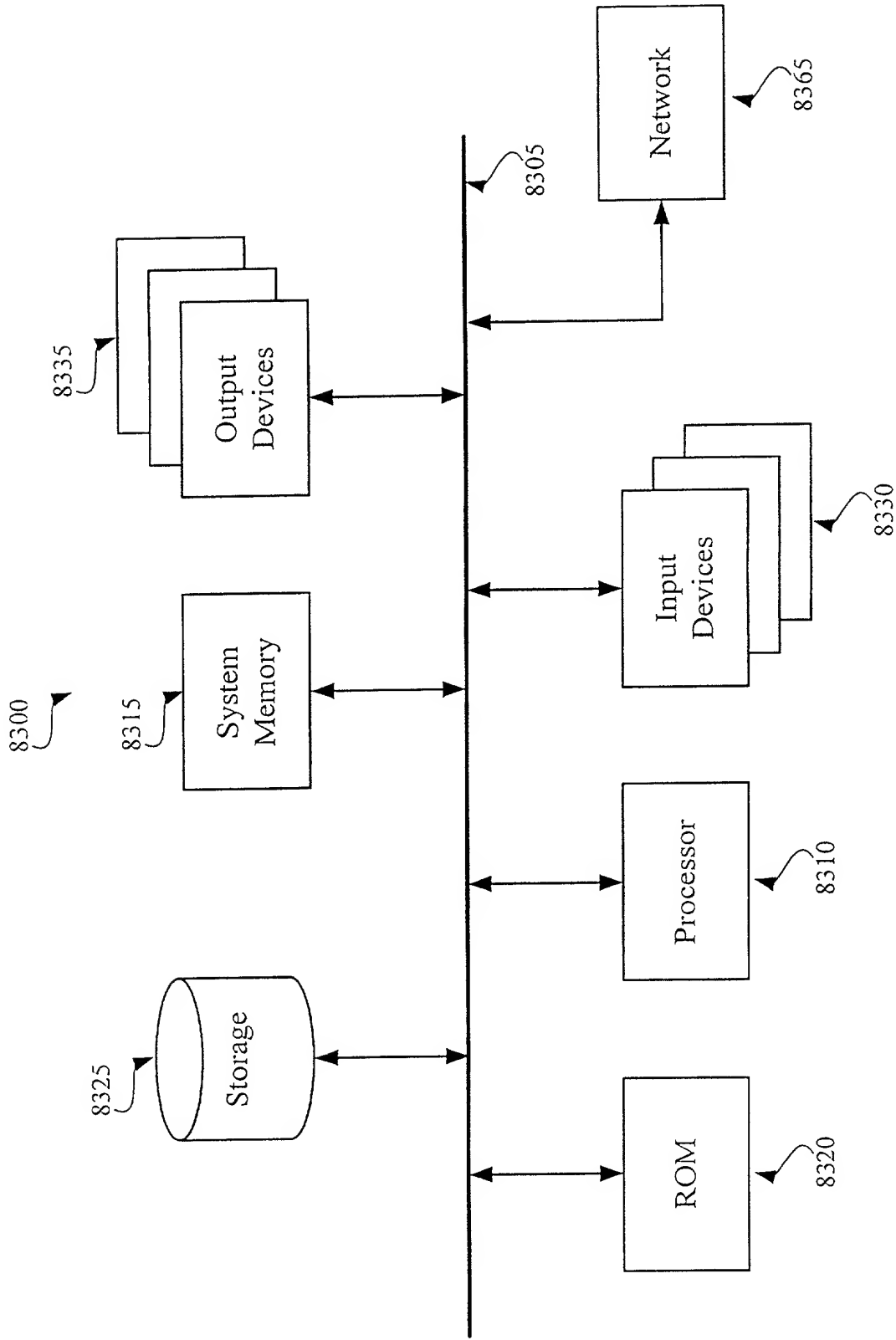


Figure 83